

**To:** Sullivan, Tim[Sullivan.Tim@epa.gov]  
**Cc:** Shinkman, Susan[Shinkman.Susan@epa.gov]; Kelley, Rosemarie[Kelley.Rosemarie@epa.gov]; Fried, Gregory[Fried.Gregory@epa.gov]  
**From:** Brooks, Phillip  
**Sent:** Mon 12/7/2015 5:49:53 PM  
**Subject:** RE: Info on NAEMS

1/19/16 at 2:00pm

**From:** Sullivan, Tim  
**Sent:** Monday, December 07, 2015 12:47 PM  
**To:** Brooks, Phillip <Brooks.Phillip@epa.gov>  
**Cc:** Shinkman, Susan <Shinkman.Susan@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Fried, Gregory <Fried.Gregory@epa.gov>  
**Subject:** RE: Info on NAEMS

## Ex. 5 - Attorney Client

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2248A)  
Washington, D.C. 20460

Telephone: 202.564.2723  
Facsimile: 202.564.9001

Help eliminate environmental violations - report tips and complaints at:  
<http://www.epa.gov/compliance/complaints/index.html>

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**From:** Sullivan, Tim  
**Sent:** Monday, November 30, 2015 11:56 AM  
**To:** Brooks, Phillip <Brooks.Phillip@epa.gov>  
**Cc:** Shinkman, Susan <Shinkman.Susan@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Fried, Gregory <Fried.Gregory@epa.gov>  
**Subject:** RE: Info on NAEMS

## Ex. 5 - Attorney Client

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Air Enforcement Division  
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**From:** Brooks, Phillip  
**Sent:** Monday, November 30, 2015 11:42 AM  
**To:** Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)>  
**Cc:** Kelley, Rosemarie <[Kelley.Rosemarie@epa.gov](mailto:Kelley.Rosemarie@epa.gov)>  
**Subject:** Re: Info on NAEMS

Adding Tim and Greg

Tim

## Ex. 5 - Attorney Client

Sent from my iPhone

On Nov 30, 2015, at 11:39 AM, Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)> wrote:

### Ex. 5 - Deliberative Process

**From:** Brooks, Phillip  
**Sent:** Monday, November 30, 2015 10:22 AM  
**To:** Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)>; Kelley, Rosemarie

<Kelley.Rosemarie@epa.gov>

**Subject:** Info on NAEMS

Sent from my iPhone

Begin forwarded message:

**From:** "Koerber, Mike" <Koerber.Mike@epa.gov>

**Date:** November 30, 2015 at 10:09:46 AM EST

**To:** "Brooks, Phillip" <Brooks.Phillip@epa.gov>, "Stewart, Lori"  
<Stewart.Lori@epa.gov>

**Subject: RE: talk with Tom Burke**

## Ex. 5 - Deliberative Process

Mike

**From:** Brooks, Phillip

**Sent:** Monday, November 30, 2015 9:09 AM

**To:** Stewart, Lori <Stewart.Lori@epa.gov>

**Cc:** Koerber, Mike <Koerber.Mike@epa.gov>

**Subject:** RE: talk with Tom Burke

Thank you Lori.

## Ex. 5 - Deliberative Process

Phill

**From:** Stewart, Lori  
**Sent:** Monday, November 30, 2015 9:07 AM  
**To:** Brooks, Phillip <Brooks.Phillip@epa.gov>  
**Cc:** Koerber, Mike <Koerber.Mike@epa.gov>  
**Subject:** FW: talk with Tom Burke

## Ex. 5 - Deliberative Process

**From:** McCabe, Janet  
**Sent:** Wednesday, November 25, 2015 1:31 PM  
**To:** Stewart, Lori <Stewart.Lori@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>; Hengst, Benjamin <Hengst.Benjamin@epa.gov>; DeMocker, Jim <DeMocker.Jim@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>  
**Subject:** talk with Tom Burke

Folks—I had a good talk with Tom Burke just now, and am reporting out with some requests for followup.

## **Ex. 5 - Deliberative Process**

## **Ex. 5 - Deliberative Process**

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**Cc:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 1/14/2016 1:47:23 PM  
**Subject:** FW: First Cut at a 2-pager for Next Weeks NAEMS Meeting  
NAEMS mtg w ORD and OECA - 01 14 2016.docx

Here is the revised 2-pager

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Sullivan, Tim  
**Sent:** Wednesday, January 13, 2016 2:42 PM  
**To:** Vette, Alan <Vette.Alan@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>  
**Cc:** McKinney, Doug <Mckinney.Douglas@epa.gov>; Hassett-Sipple, Beth <Hassett-Sipple.Beth@epa.gov>; Nunez, Carlos <Nunez.Carlos@epa.gov>; Spence, Kelley <Spence.Kelley@epa.gov>  
**Subject:** RE: First Cut at a 2-pager for Next Weeks NAEMS Meeting

I have combined both sets of edits and comments into the attached document.

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Vette, Alan

**Sent:** Wednesday, January 13, 2016 2:17 PM

**To:** Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>; Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>

**Cc:** McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Hassett-Sipple, Beth <[Hassett-Sipple.Beth@epa.gov](mailto:Hassett-Sipple.Beth@epa.gov)>; Nunez, Carlos <[Nunez.Carlos@epa.gov](mailto:Nunez.Carlos@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>

**Subject:** RE: First Cut at a 2-pager for Next Weeks NAEMS Meeting

Attached is a version with some revisions provided by Doug, Beth and me.

---

Alan Vette, Ph.D. | Deputy Director for Air, Climate and Energy Research

Office of Research and Development | U.S. Environmental Protection Agency

MD D143-01, Rm. D140-D RTP, NC 27711 | office: 919.541.1378 | cell: 919.280.7635

**From:** Sullivan, Tim

**Sent:** Wednesday, January 13, 2016 12:31 PM

**To:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>

**Cc:** McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Vette, Alan <[Vette.Alan@epa.gov](mailto:Vette.Alan@epa.gov)>; Hassett-Sipple, Beth <[Hassett-Sipple.Beth@epa.gov](mailto:Hassett-Sipple.Beth@epa.gov)>; Nunez, Carlos <[Nunez.Carlos@epa.gov](mailto:Nunez.Carlos@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>

**Subject:** RE: First Cut at a 2-pager for Next Weeks NAEMS Meeting

Thanks, Robin and Bill.



My comments and edits are attached. Please let me know if you have any questions.

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Dunkins, Robin  
**Sent:** Tuesday, January 12, 2016 6:29 PM  
**To:** Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>; McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Vette, Alan <[Vette.Alan@epa.gov](mailto:Vette.Alan@epa.gov)>; Hassett-Sipple, Beth <[Hassett-Sipple.Beth@epa.gov](mailto:Hassett-Sipple.Beth@epa.gov)>; Nunez, Carlos <[Nunez.Carlos@epa.gov](mailto:Nunez.Carlos@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>; Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>  
**Subject:** RE: First Cut at a 2-pager for Next Weeks NAEMS Meeting

Looping Tim Sullivan from OECA into the discussion.

Robin Dunkins, Group Leader

Natural Resources Group

OAR/OAQPS/SPPD Mail Code: E143-03

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

919-541-5335

[dunkins.robina@epa.gov](mailto:dunkins.robina@epa.gov)

**From:** Schrock, Bill

**Sent:** Tuesday, January 12, 2016 3:52 PM

**To:** McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Vette, Alan <[Vette.Alan@epa.gov](mailto:Vette.Alan@epa.gov)>; Hassett-Sipple, Beth <[Hassett-Sipple.Beth@epa.gov](mailto:Hassett-Sipple.Beth@epa.gov)>; Nunez, Carlos <[Nunez.Carlos@epa.gov](mailto:Nunez.Carlos@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>; Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>

**Subject:** First Cut at a 2-pager for Next Weeks NAEMS Meeting

Attached is a first draft of a 2-pager for next weeks meeting. Please let me know if you have any comments. Thanks

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**To:** Vasu, Amy[Vasu.Amy@epa.gov]  
**Cc:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 1/7/2016 8:10:39 PM  
**Subject:** RE: Due COB today -- Agricultural BMPs -- FW: 2016 OAR Priorities

Amy -- With regards to the ag best management document (it's really just an AFO BMP as we completed the cropping BMP several years ago) for 2016-we anticipate completing the draft document and circulating for review through various USDA offices by mid 2016. A draft final document will be circulated for final review in late 2016. Depending on the length of time for the final review the document may be finalized in 2016-however based on previous review time for the cropping BMP it will likely be early 2017 for finalization. Let me know if you need anything further on this. Thanks

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Vasu, Amy  
**Sent:** Thursday, January 07, 2016 2:05 PM  
**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>  
**Cc:** Thompson, Fred <Thompson.Fred@epa.gov>  
**Subject:** Due COB today -- Agricultural BMPs -- FW: 2016 OAR Priorities

Robin or Bill,

Mike K has asked that, by COB today, we answer the following for 2016 OAR priorities:

- Agricultural BMPs: What milestones and deliverables are expected in 2016?

I will call you to check on how best to provide an answer (a sentence or two) on this.

Thank you.

Amy

~~~~~  
*Amy B. Vasu*

*U.S. EPA / OAQPS*

*Sector Policies and Programs Division*

*email: [vasu.amy@epa.gov](mailto:vasu.amy@epa.gov)*

*phone: 919.541.0107*

**From:** Koerber, Mike

**Sent:** Thursday, January 07, 2016 7:56 AM

**To:** Wayland, Richard <[Wayland.Richard@epa.gov](mailto:Wayland.Richard@epa.gov)>; Hemby, James <[Hemby.James@epa.gov](mailto:Hemby.James@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Scavo, Kimber <[Scavo.Kimber@epa.gov](mailto:Scavo.Kimber@epa.gov)>; Wood, Anna <[Wood.Anna@epa.gov](mailto:Wood.Anna@epa.gov)>; Johnson, Yvonne W <[Johnson.Yvonnnew@epa.gov](mailto:Johnson.Yvonnnew@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Vasu, Amy <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>; Thompson, Fred <[Thompson.Fred@epa.gov](mailto:Thompson.Fred@epa.gov)>

**Cc:** South, Peter <[South.Peter@epa.gov](mailto:South.Peter@epa.gov)>

**Subject:** RE: 2016 OAR Priorities

Lori would like our feedback by Friday, so I would appreciate your responses by COB today.  
Thanks.

Mike

**From:** Koerber, Mike

**Sent:** Tuesday, January 05, 2016 7:40 AM

**To:** Wayland, Richard <[wayland.richard@epa.gov](mailto:wayland.richard@epa.gov)>; Hemby, James <[Hemby.James@epa.gov](mailto:Hemby.James@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Scavo, Kimber <[Scavo.Kimber@epa.gov](mailto:Scavo.Kimber@epa.gov)>; Wood, Anna <[Wood.Anna@epa.gov](mailto:Wood.Anna@epa.gov)>; Johnson, Yvonne W <[Johnson.Yvonnnew@epa.gov](mailto:Johnson.Yvonnnew@epa.gov)>; Tsirigotis, Peter

<Tsirigotis.Peter@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Thompson, Fred  
<Thompson.Fred@epa.gov>  
**Cc:** South, Peter <South.Peter@epa.gov>  
**Subject:** 2016 OAR Priorities

Janet had a few questions related to the 2016 priorities list prepared last fall – see below. Please send me your responses by the end of the week. Thanks.

Mike

#### AQAD

- Near-Road Monitoring Revisions: What is expected date of NPRM?
- Combined Air Emissions Reporting: What milestones and deliverables are expected in 2016?

#### AQPD

- What is the status of the response to the Eliot, ME 126 petition?
- What is the expected date of the Regional Haze Accomplishments Report?
- SIP Backlog – Is there anything that Janet should be doing to help the Regions address their backlogs?

#### HEID

- NATA Lean Project: Will this commence and conclude in 2016?

#### SPPD

- Agricultural BMPs: What milestones and deliverables are expected in 2016?

- NSPS Streamlining: Are we still doing anything on this?

**To:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 10/15/2015 5:39:44 PM  
**Subject:** FW: The NAEMS one pager I sent to Burke  
[NAEMS action plan in brief - draft.docx](#)  
[ATT00001.htm](#)

Well I guess it's back on the agenda!

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Dunkins, Robin  
**Sent:** Thursday, October 15, 2015 1:34 PM  
**To:** Schrock, Bill; Spence, Kelley; Costa, Allison  
**Subject:** Fwd: The NAEMS one pager I sent to Burke

FYI. Let me know if you notice anything different from our understanding.

Thanks

Robin Dunkins, Leader

Natural Resources Group

OAR/OAQPS/SPPD

RTP, NC 27711

Office: 919-541-5335

**Ex. 6 - Personal Privacy**

[dunkins.robins@epa.gov](mailto:dunkins.robins@epa.gov)

Begin forwarded message:

**From:** "Koerber, Mike" <Koerber.Mike@epa.gov>  
**Date:** October 15, 2015 at 12:51:06 PM EDT  
**To:** "Dunkins, Robin" <Dunkins.Robin@epa.gov>  
**Subject:** FW: The NAEMS one pager I sent to Burke

## **Ex. 5 - Deliberative Process**

**From:** Shoaff, John  
**Sent:** Thursday, October 15, 2015 9:28 AM  
**To:** Koerber, Mike; Hubbell, Bryan  
**Cc:** Mazza, Carl; Keating, Terry  
**Subject:** FW: The NAEMS one pager I sent to Burke

Mike and Bryan,

## **Ex. 5 - Deliberative Process**



Thx.

John

**John Shoaff** | Leader, Policy Support Group

Office of Air Policy & Program Support (OAPPS)

Office of Air & Radiation | U.S. EPA | WJC North 5442-B

1200 Pennsylvania Ave. NW | MC 6103A | Washington, D.C. | 20460 | USA

[Shoaff.john@epa.gov](mailto:Shoaff.john@epa.gov) | 1-202-564-0531 Direct | **Ex. 6 - Personal Privacy**

**From:** Costa, Dan

**Sent:** Wednesday, October 14, 2015 10:02 PM

**To:** Shoaff, John

**Cc:** Mazza, Carl; Keating, Terry

**Subject:** The NAEMS one pager I sent to Burke

## **Ex. 5 - Deliberative Process**

# Ex. 5 - Deliberative Process

dlc

\*\*\*\*\*

Dan Costa, Sc.D., DABT / National Program Director for Air Climate & Energy Research, E205-09 EPA/ORD /  
Research Triangle Park, NC 27711 / Office - E211-D / ph. 919.541.2532 / work cell: 919.280-6841 / personal cell:  
Ex. 5 - Personal Privacy fax: 919.685.3248 /

work email: [costa.dan@epa.gov](mailto:costa.dan@epa.gov) / home email: [costadi40@gmail.com](mailto:costadi40@gmail.com)

[FEDEX address: 4930 Page Rd. / Durham, NC 27703]

Program Website - <http://www.epa.gov/airscience/> / <http://www.epa.gov/research/climatescience/>

Office Assistant - Patricia McGhee: 919-541-2607

**To:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Wed 10/7/2015 4:59:42 PM  
**Subject:** FW: Discuss CAFO BMP Document - Call in Number 866-299-3188;; **Conference Code**  
**Conference Code**  
[AFOs Air Emission BMPs Draft 10.7.2015.docx](#)  
[AFOs Air Emission BMPs Data Collection Summary 10.7.2015.docx](#)

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

---

**From:** WangLi, Lingjuan  
**Sent:** Wednesday, October 07, 2015 10:43 AM  
**To:** Schrock, Bill; Zwicke, Greg - NRCS, Fort Collins, CO; greg.johnson@por.usda.gov; Costa, Allison; Dunkins, Robin  
**Subject:** RE: Discuss CAFO BMP Document - Call in Number 866-299-3188;; **Conference Code**  
**Conference Code**

All:

Attached please find the most up to date documents that I have been working on.

Talk to you later

Thanks  
Ling

-----  
Lingjuan (Ling) Wang Li, Ph.D.  
Visiting Scientist  
Natural Resources Group (NRG)  
Sector Policies and Programs Division (SPPD)  
Office of Air Quality Planning and Standards (OAQPS)  
Environmental Protection Agency (EPA)  
109 TW Alexander Dr. BldgE.  
RTP, NC 27711  
Email: [WangLi.Lingjuan@epa.gov](mailto:WangLi.Lingjuan@epa.gov)  
Phone: 919-541-1339

Associate Professor  
Department of Biological and Agricultural Engineering

North Carolina State University  
3110 Faucette Dr. Campus Box 7625  
Raleigh, NC27695  
Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)  
Phone: 919-515-6762  
<http://www.bae.ncsu.edu/topic/airquality/>  
<http://www.bae.ncsu.edu/people/faculty/lwang5/>

-----Original Appointment-----

**From:** Schrock, Bill

**Sent:** Tuesday, October 06, 2015 4:29 PM

**To:** Zwicke, Greg - NRCS, Fort Collins, CO; [greg.johnson@por.usda.gov](mailto:greg.johnson@por.usda.gov); Costa, Allison; Dunkins, Robin; WangLi, Lingjuan

**Subject:** Discuss CAFO BMP Document - Call in Number 866-299-3188, 

|                        |
|------------------------|
| <b>Conference Code</b> |
|------------------------|

**When:** Wednesday, October 07, 2015 1:30 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RTP-OAQPS-E141B/RTP-OAQPS-BLDG-E

Just a brief update before Ling departs for a few weeks.

Greg/Greg - If this time doesn't work let me know what times are better and I'll try and re-schedule. Thanks

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**Cc:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 10/5/2015 3:22:40 PM  
**Subject:** CAFO Documents  
[NAEMS talking points for JMcCabe 17MAR15.docx](#)  
[NAEMS Action Planwith draft implementation 060215.docx](#)  
[Meiberg CAFO Briefing\\_061815\].docx](#)

Robin – Attached are the most recent files for forwarding to Terry as followup to our meeting this morning.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**To:** Spence, Kelley[Spence.Kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 9/24/2015 8:59:11 PM  
**Subject:** RE: Emissions from Poultry Industry

Right you are!

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Spence, Kelley  
**Sent:** Thursday, September 24, 2015 4:35 PM  
**To:** Schrock, Bill  
**Subject:** RE: Emissions from Poultry Industry

I think you're missing a "p" in the first sentence ☺

**From:** Schrock, Bill  
**Sent:** Thursday, September 24, 2015 4:28 PM  
**To:** Dunkins, Robin  
**Cc:** Spence, Kelley  
**Subject:** FW: Emissions from Poultry Industry

Maybe you can massage this language to fit a response back to Reg 4.

## Ex. 5 - Deliberative Process

## **Ex. 5 - Deliberative Process**

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Palmer, Darren  
**Sent:** Thursday, September 17, 2015 2:30 PM  
**To:** Schrock, Bill  
**Subject:** Emissions from Poultry Industry

Hey Bill.

## **Ex. 5 - Deliberative Process**

# Ex. 5 - Deliberative Process

## Ex. 6 - Personal Privacy

Thanks for any advice or pointers.

Darren Palmer

USEPA - Region 4

APTMD/AASB

Air Data & Analysis Section

PH: (404) 562-9052

FX: (404) 562-9095

<http://www.epa.gov/region4>

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**To:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Wed 9/9/2015 1:25:24 PM  
**Subject:** FW: "Reference Guide to AFO Air Emission BMPs"\_Working Plan  
AFO Air Emission BMPs Working Plan.docx

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** WangLi, Lingjuan  
**Sent:** Wednesday, August 26, 2015 4:17 PM  
**To:** Dunkins, Robin; Schrock, Bill; greg.johnson@por.usda.gov; greg.zwicke@ftc.usda.gov  
**Cc:** lwang5@ncsu.edu  
**Subject:** "Reference Guide to AFO Air Emission BMPs"\_Working Plan

**Robin and Bill:**

## Ex. 5 - Deliberative Process

**Greg & Greg:**

Howdy! Today is my 3<sup>rd</sup> day with Robin's group. I enjoy the time here and have been trying to get myself adjusted to the new system. I am getting there ☺.

## Ex. 5 - Deliberative Process

**Ex. 5 - Deliberative Process**

Thanks

Ling

-----

Lingjuan (Ling) Wang Li

Visiting Scientist

Sector Policies and Programs Division

Office of Air Quality Planning and Standards

Environmental Protection Agency

109 TW Alexander Dr. BldgE.

RTP, NC 27711

Phone: 919-541-1339

Associate Professor

Department of Biological and Agricultural Engineering

North Carolina State University

3110 faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)

Phone: 919-515-6762

**To:** WangLi, Lingjuan[WangLi.Lingjuan@epa.gov]; Dunkins, Robin[Dunkins.Robin@epa.gov]; greg.johnson@por.usda.gov[greg.johnson@por.usda.gov]; greg.zwicke@ftc.usda.gov[greg.zwicke@ftc.usda.gov]  
**Cc:** lwang5@ncsu.edu[lwang5@ncsu.edu]  
**From:** Schrock, Bill  
**Sent:** Thur 8/27/2015 1:36:13 PM  
**Subject:** RE: "Reference Guide to AFO Air Emission BMPs"\_Working Plan  
AFO Air Emission BMPs\_Working Plan\_wcs.docx

## Ex. 5 - Deliberative Process

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** WangLi, Lingjuan  
**Sent:** Wednesday, August 26, 2015 4:17 PM  
**To:** Dunkins, Robin; Schrock, Bill; greg.johnson@por.usda.gov; greg.zwicke@ftc.usda.gov  
**Cc:** lwang5@ncsu.edu  
**Subject:** "Reference Guide to AFO Air Emission BMPs"\_Working Plan

**Robin and Bill:**

## Ex. 5 - Deliberative Process

**Greg & Greg:**

Howdy! Today is my 3<sup>rd</sup> day with Robin's group. I enjoy the time here and have been trying to get myself adjusted to the new system. I am getting there ☺.

## Ex. 5 - Deliberative Process

# **Ex. 5 - Deliberative Process**

Thanks

Ling

-----

Lingjuan (Ling) Wang Li

Visiting Scientist

Sector Policies and Programs Division

Office of Air Quality Planning and Standards

Environmental Protection Agency

109 TW Alexander Dr. BldgE.

RTP, NC 27711

Phone: 919-541-1339

Associate Professor

Department of Biological and Agricultural Engineering

North Carolina State University

3110 faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)

Phone: 919-515-6762



**To:** Sullivan, Tim[Sullivan.Tim@epa.gov]; Swenson, Erik[Swenson.Erik@epa.gov]; Salo, Earl[Salo.Earl@epa.gov]  
**Cc:** Matthiessen, Craig[Matthiessen.Craig@epa.gov]; Jennings, Kim[Jennings.Kim@epa.gov]; Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Yonce, Stacey  
**Sent:** Thur 1/21/2016 3:31:43 PM  
**Subject:** RE: CAFO CERCLA-EPCRA Reporting Rule Litigation

Hi Tim,

I am on a call right now – when is your meeting?

## Ex. 5 - Attorney Client

Stacey Yonce

Regulations Implementation Division

U.S. EPA Office of Emergency Management

1200 Pennsylvania Avenue NW

Washington, DC 20460

(202) 564-2288

**From:** Sullivan, Tim

**Sent:** Thursday, January 21, 2016 10:27 AM

**To:** Swenson, Erik <Swenson.Erik@epa.gov>; Salo, Earl <Salo.Earl@epa.gov>; Yonce, Stacey <yonce.stacey@epa.gov>

**Cc:** Matthiessen, Craig <Matthiessen.Craig@epa.gov>; Jennings, Kim <Jennings.Kim@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>  
**Subject:** CAFO CERCLA-EPCRA Reporting Rule Litigation

Good morning, Erik, Earl, and Stacey.

## Ex. 5 - Attorney Client

Thanks –

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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mail and delete this message and any attachments from your machine and all storage media whether in electronic or hard copy. Thank you.

## FACT SHEET/WEB Message

February 2009

### CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms

#### FINAL RULE

The final rule, "CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms," which became effective on January 20, 2009, is an *exemption* from the existing notification requirements that have been in place since the 1984 final rule on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) notification requirements was published. The final rule *exempts* all farms that release hazardous substances from animal waste to the air that meet or exceed their reportable quantity (RQ) from reporting under CERCLA section 103. The final rule also *exempts* farms that release hazardous substances from animal waste to the air that meet or exceed their RQ from reporting under the Emergency Planning and Community Right to Know Act (EPCRA) section 304 if they stable or confine *fewer* than the following number of animal species:

1. 700 mature dairy cows, whether milked or dry
2. 1,000 veal calves
3. 1,000 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs
4. 2,500 swine each weighing 55 pounds or more
5. 10,000 swine each weighing less than 55 pounds
6. 500 horses
7. 10,000 sheep or lambs
8. 55,000 turkeys
9. 30,000 laying hens or broilers, if the farm uses a liquid manure handling system
10. 125,000 chickens (other than laying hens), if the farm uses other than liquid manure handling system
11. 82,000 laying hens, if the farm uses other than a liquid manure handling system
12. 30,000 ducks (if the farm uses other than a liquid manure handling system)
13. 5,000 ducks (if the farm uses a liquid manure handling system)

(Animals that reside primarily outside of an enclosed structure (i.e., a barn or a feed lot) and graze on pastures are not stabled or confined.)

**This regulation *does not* create any new regulatory requirements or reporting deadlines.**

Whereas, those farms that stable or confine greater than the number of animal species identified above are still required to submit the appropriate reports if they release hazardous substances to the air that meet or exceed their RQ to State and local officials pursuant to EPCRA section 304. That is, the reporting requirement under EPCRA section 304 in this rule does not create a new regulatory requirement.

For purposes of this rule:

*Animal Waste* means manure (feces, urine, and other excrement produced by livestock), digestive emissions, and urea. The definition includes animal waste when mixed or commingled with bedding, compost, feed, soil and other typical materials found with animal waste.

*Farm* means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year.

Finally, the exemption created by the rule does not impact EPA's authority to respond to citizen complaints or requests for assistance from State or local government agencies to investigate and respond to those releases of hazardous substances from farms. Nor does this rule limit any of the Agency's other authorities under CERCLA, e.g. liability or EPCRA.

## **BACKGROUND**

CERCLA section 103 notification requirements calls for immediate notification to the National Response Center (NRC) when the person in charge of a facility has knowledge of a release of a hazardous substance equal to or greater than the RQ established by EPA for that substance.

EPCRA section 304 emergency notification requirements call for notification to be given to the community emergency coordinator for each Local Emergency Planning Commission (LEPC) for any area likely to be affected by the release, and the State Emergency Response Committee (SERC) of any State likely to be affected by the release. Through this notification, State and local officials can assess whether a response action to the release is appropriate. EPCRA section 304 notification requirements apply only to releases that have the potential for off-site exposure and that are from facilities that produce, use, or store a "hazardous chemical," as defined by regulations promulgated under the Occupational Safety and Health Act of 1970 (OSHA) (29 CFR 1910.1200(c)) and by section 311 of EPCRA.

## **YOU ARE NOT REQUIRED TO REPORT IF:**

You have reported continuous releases in the past and your continuous release report is up to date and on file with the appropriate SERC and LEPC; or

Your releases are less than the RQ.

Moreover, EPA does not expect farms participating in the Agency's Animal Feeding Operation Air Compliance Agreement (70 *Fed. Reg.* 4958), and that are in compliance with the terms of the Agreement, to report at this time.

Farms that *are required* to report their air releases of hazardous substances from animal waste under EPCRA should follow the requirements at 40 CFR 355.32, "Which emergency release notification requirements apply to continuous releases?" For these notifications you are *not* required to call the National Response Center. Your initial telephone notification should be directed to the community emergency coordinator for the LEPC for any area likely to be affected

by the release and to the SERC of any State likely to be affected by the release. You will then submit the written notification to those LEPCs and SERCs as appropriate.

For continuous release reporting, to establish the continuity and stability of the release, you may use:

- Prior release data;
- Knowledge of operating procedures; or
- Best professional judgment.

#### LOOK FOR UPDATES

As the Agency receives additional questions that are generally applicable to a wide audience, we will update this fact sheet on the web with those questions and answers.

For more information on the Air Compliance Agreement and the air monitoring study, please visit: <http://www.epa.gov/compliance/resources/agreements/caa/cafo-agr.html>. EPA is working on developing emission estimating methodologies based in part on the data collected in the National Air Emissions Monitoring Study, which is scheduled for completion at the end of 2009 with the final report to be complete in 2011.

Dated: February 5, 2009

**From:** Sullivan, Tim

**Location:** Call-In Number: 855.564.1700 / Conference Extension: 1104561 /

**Conference Code**

**Importance:** Normal

**Subject:** AFO Air Emissions / NAEMS Discussion

**Start Date/Time:** Tue 7/26/2016 8:00:00 PM

**End Date/Time:** Tue 7/26/2016 8:30:00 PM

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Fri 2/19/2016 5:32:26 PM  
**Subject:** RE: NAEMS Workplan Revised - February 11 2016 final (00000002) MK.docx  
NAEMS Workplan Revised - February 11 2016 final (00000002) MK.docx

Hi, Robin.

## Ex. 5 - Attorney Client

Thanks –

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Dunkins, Robin  
**Sent:** Thursday, February 18, 2016 5:27 PM  
**To:** Sullivan, Tim <Sullivan.Tim@epa.gov>  
**Subject:** FW: NAEMS Workplan Revised - February 11 2016 final (00000002) MK.docx

I don't have the latest draft but here are our last set of edits. Stay tuned

Robin Dunkins, Group Leader

Natural Resources Group

OAR/OAQPS/SPPD Mail Code: E143-03

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

919-541-5335

dunkins.robin@epa.gov

**From:** Dunkins, Robin  
**Sent:** Thursday, February 18, 2016 3:42 PM  
**To:** Nunez, Carlos <Nunez.Carlos@epa.gov>; McKinney, Doug <McKinney.Douglas@epa.gov>  
**Subject:** NAEMS Workplan Revised - February 11 2016 final (00000002) MK.docx

Carlos/Doug

We had a couple of additional edits to your revised workplan. Please let me know if we need to discuss further. I understand this meeting is scheduled for Tuesday, Feb 23 @ 4pm.

Thanks,

Robin



**To:** Yonce, Stacey[yonce.stacey@epa.gov]  
**Cc:** Matthiessen, Craig[Matthiessen.Craig@epa.gov]; Jennings, Kim[Jennings.Kim@epa.gov]; Dunkins, Robin[Dunkins.Robin@epa.gov]; Swenson, Erik[Swenson.Erik@epa.gov]; Salo, Earl[Salo.Earl@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Thur 1/21/2016 3:39:02 PM  
**Subject:** RE: CAFO CERCLA-EPCRA Reporting Rule Litigation

Thanks for the note, Stacey – that is very helpful and the most info we should need for the meeting, which is at 11.

## Ex. 5 - Attorney Client

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Yonce, Stacey

**Sent:** Thursday, January 21, 2016 10:32 AM

**To:** Sullivan, Tim <Sullivan.Tim@epa.gov>; Swenson, Erik <Swenson.Erik@epa.gov>; Salo, Earl <Salo.Earl@epa.gov>

**Cc:** Matthiessen, Craig <Matthiessen.Craig@epa.gov>; Jennings, Kim <Jennings.Kim@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>

**Subject:** RE: CAFO CERCLA-EPCRA Reporting Rule Litigation

Hi Tim,

I am on a call right now when is your meeting?

## Ex. 5 - Attorney Client

Stacey Yonce

Regulations Implementation Division

U.S. EPA Office of Emergency Management

1200 Pennsylvania Avenue NW

Washington, DC 20460

(202) 564-2288

**From:** Sullivan, Tim

**Sent:** Thursday, January 21, 2016 10:27 AM

**To:** Swenson, Erik <Swenson.Erik@epa.gov>; Salo, Earl <Salo.Earl@epa.gov>; Yonce, Stacey <yonce.stacey@epa.gov>  
**Cc:** Matthiessen, Craig <Matthiessen.Craig@epa.gov>; Jennings, Kim <Jennings.Kim@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>  
**Subject:** CAFO CERCLA-EPCRA Reporting Rule Litigation

Good morning, Erik, Earl, and Stacey.

## Ex. 5 - Attorney Client

Thanks –

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**To:** Huffman, Linda[Huffman.Linda@epa.gov]  
**Cc:** Brooks, Phillip[Brooks.Phillip@epa.gov]; Fried, Gregory[Fried.Gregory@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Wed 1/20/2016 5:39:09 PM  
**Subject:** RE: NAEMS Meeting (Confirmed)  
NAEMS mtg w ORD and OECA - 01 20 2016.docx

Linda:

## Ex. 5 - Deliberative Process

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Brooks, Phillip

Sent from my iPhone

Begin forwarded message:

**From:** "Huffman, Linda" <[Huffman.Linda@epa.gov](mailto:Huffman.Linda@epa.gov)>  
**Date:** January 20, 2016 at 9:23:51 AM EST  
**To:** "Brooks, Phillip" <[Brooks.Phillip@epa.gov](mailto:Brooks.Phillip@epa.gov)>  
**Subject:** NAEMS Meeting (Confirmed)

Do you have any background on this meeting? or should we have a pre-brief for Cynthia?

-----

**Subject:** NAEMS Meeting (Confirmed)

**Location:** WJC-N 5400

**Start:** Thu 1/21/2016 11:00 AM

**End:** Thu 1/21/2016 11:45 AM

**Recurrence:** (none)

**Meeting Status:** Accepted

**Organizer:** McCabe, Janet

**Required Attendees:** Dunkins, Robin; Page, Steve; Tsirigotis, Peter; Koerber, Mike; Burke, Thomas; Costa, Dan; Kavlock, Robert; Vette, Alan; Nunez, Carlos; Schultz, Laurel; Hauchman, Fred; Gwinn, Maureen; Deener, Kathleen; Smith, Kelley; Giles-AA, Cynthia; Brooks, Phillip

**Optional Attendees:** Huffman, Linda; Gentry, Nathan; Williams, Larke; Benner, Tim; Shinkman, Susan; Kelley, Rosemarie

**To:** Janet McCabe; Robin Dunkins; Steve Page; Peter Tsigotis; Mike Koerber; Tom Burke; Dan Costa; Robert Kavlock; Alan Vette; Carlos Nunez; Laurel Schultz; Fred Hauchman; Maureen Gwinn; Kathleen Deener; Kelley Smith; Nathan Gentry; Giles, Cynthia; Huffman, Linda; Brooks, Phillip

**To:** Fried, Gregory[Fried.Gregory@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Wed 1/20/2016 5:16:12 PM  
**Subject:** RE: NAEMS mtg w ORD and OECA - 01 20 2016.docx

Okay.

Does he – or do you – want a background discussion on this, perhaps later today?

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Fried, Gregory  
**Sent:** Wednesday, January 20, 2016 12:15 PM  
**To:** Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>  
**Subject:** RE: NAEMS mtg w ORD and OECA - 01 20 2016.docx

Tim.



Phill suggested we send the current version up to Linda Huffman and tell her that there may be a more recent version later.

-Greg

**From:** Sullivan, Tim  
**Sent:** Wednesday, January 20, 2016 12:01 PM  
**To:** Fried, Gregory <[Fried.Gregory@epa.gov](mailto:Fried.Gregory@epa.gov)>  
**Subject:** RE: NAEMS mtg w ORD and OECA - 01 20 2016.docx

## Ex. 5 - Attorney Client

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

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**From:** Fried, Gregory  
**Sent:** Wednesday, January 20, 2016 11:55 AM  
**To:** Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>  
**Subject:** FW: NAEMS mtg w ORD and OECA - 01 20 2016.docx

Do you want to send this to Phill?

**From:** Dunkins, Robin  
**Sent:** Wednesday, January 20, 2016 11:54 AM  
**To:** Fried, Gregory <[Fried.Gregory@epa.gov](mailto:Fried.Gregory@epa.gov)>; Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>; McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Vette, Alan <[Vette.Alan@epa.gov](mailto:Vette.Alan@epa.gov)>; Nunez, Carlos <[Nunez.Carlos@epa.gov](mailto:Nunez.Carlos@epa.gov)>; Hassett-Sipple, Beth <[Hassett-Sipple.Beth@epa.gov](mailto:Hassett-Sipple.Beth@epa.gov)>  
**Cc:** Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>  
**Subject:** NAEMS mtg w ORD and OECA - 01 20 2016.docx

Hello all,

My apologies for the delay in getting a revised version of briefing materials to you. I understand that my front office (Steve Page/Mike Koerber) will be talking with Dan Costa (ORD) this afternoon.

**Ex. 5 - Deliberative Process**

**Ex. 5 - Deliberative Process**

**Ex. 5 - Deliberative Process**

Thanks,

Robin

**To:** Brooks, Phillip[Brooks.Phillip@epa.gov]  
**Cc:** Chapman, Apple[Chapman.Apple@epa.gov]; Fried, Gregory[Fried.Gregory@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Tue 1/12/2016 10:40:16 PM  
**Subject:** RE: NAMES Meeting (Confirmed)  
NAEMS mtg w ORD and OECA - 01.06.2015\_Rev Draft.docx

Phil:

## Ex. 5 - Attorney Client

Let me know if you want to talk or need anything else on this matter.

Thanks –

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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-----Original Appointment-----

**From:** McCabe, Janet

**Sent:** Tuesday, January 12, 2016 1:05 PM

**To:** McCabe, Janet; Dunkins, Robin; Page, Steve; Tsirigotis, Peter; Koerber, Mike; Burke, Thomas; Costa, Dan; Kavlock, Robert; Vette, Alan; Nunez, Carlos; Schultz, Laurel; Hauchman, Fred; Gwinn, Maureen; Deener, Kathleen; Smith, Kelley; Giles-AA, Cynthia

**Cc:** Huffman, Linda; Gentry, Nathan

**Subject:** NAMES Meeting (Confirmed)

**When:** Tuesday, January 19, 2016 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** WJC-N 5400

**To:** Janet McCabe; Robin Dunkins; Steve Page; Peter Tsirigotis; Mike Koerber; Tom Burke; Dan Costa; Robert Kavlock; Alan Vette; Carlos Nunez; Laurel Schultz; Fred Hauchman; Maureen Gwinn; Kathleen Deener; Kelley Smith; Nathan Gentry; Giles, Cynthia; Huffman, Linda

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Mon 1/11/2016 5:56:24 PM  
**Subject:** RE: NAEMS mtg w ORD and OECA 9\_16\_14 (00000003).docx  
NAEMS mtg w ORD and OECA - 01.06.2015 Rev Draft.docx

Hi, Robin.

## Ex. 5 - Attorney Client

Thanks –

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Sullivan, Tim

**Sent:** Wednesday, January 06, 2016 3:46 PM  
**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>  
**Cc:** McKinney, Doug <McKinney.Douglas@epa.gov>  
**Subject:** RE: NAEMS mtg w ORD and OECA 9\_16\_14 (00000003).docx

Happy New Year, Robin.

## Ex. 5 - Attorney Client

Thanks –

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

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**From:** Dunkins, Robin

**Sent:** Monday, December 14, 2015 2:07 PM

**To:** McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>

**Subject:** NAEMS mtg w ORD and OECA 9\_16\_14 (00000003).docx

Here is the briefing paper we used last year. We should use this as our starting point for developing materials for the January meeting.

**To:** Brooks, Phillip[Brooks.Phillip@epa.gov]  
**Cc:** Shinkman, Susan[Shinkman.Susan@epa.gov]; Kelley, Rosemarie[Kelley.Rosemarie@epa.gov]; Fried, Gregory[Fried.Gregory@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Mon 12/7/2015 5:47:16 PM  
**Subject:** RE: Info on NAEMS

Update: I spoke with Robin Dunkins of OAQPS and

## **Ex. 5 - Deliberative Process**

Emissions Monitoring Study (NAEMS) and

**Ex. 5 - Deliberative Process**

### **Ex. 5 - Deliberative Process**

As in prior NAEMS discussions, OECA will be responsible for discussing the events that led to the development of the AFO Air Compliance Agreement and explain where we are at the present time with the Agreement. OAR will discuss the NAEMS history, and OAR and ORD will discuss what remains to be done to complete the NAEMS.

# **Ex. 5 - Deliberative Process**

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

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U.S. Environmental Protection Agency  
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**From:** Sullivan, Tim

**Sent:** Monday, November 30, 2015 11:56 AM

**To:** Brooks, Phillip <Brooks.Phillip@epa.gov>

**Cc:** Shinkman, Susan <Shinkman.Susan@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Fried, Gregory <Fried.Gregory@epa.gov>

**Subject:** RE: Info on NAEMS

Okay – will do. I will also connect with my OAQPS NAEMS contacts to ensure we are sufficiently looped in ahead of the planned OAR-ORD-OECA NAEMS discussion.

---

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**From:** Brooks, Phillip  
**Sent:** Monday, November 30, 2015 11:42 AM  
**To:** Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)>  
**Cc:** Kelley, Rosemarie <[Kelley.Rosemarie@epa.gov](mailto:Kelley.Rosemarie@epa.gov)>  
**Subject:** Re: Info on NAEMS

Adding Tim and Greg

Tim

Please let Greg know when you are spending time on this.

Sent from my iPhone

On Nov 30, 2015, at 11:39 AM, Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)> wrote:

Tim Sullivan really does know a lot about this. I suggest bringing him into the loop.

**From:** Brooks, Phillip  
**Sent:** Monday, November 30, 2015 10:22 AM  
**To:** Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)>; Kelley, Rosemarie <[Kelley.Rosemarie@epa.gov](mailto:Kelley.Rosemarie@epa.gov)>  
**Subject:** Info on NAEMS

Sent from my iPhone

Begin forwarded message:

**From:** "Koerber, Mike" <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>  
**Date:** November 30, 2015 at 10:09:46 AM EST  
**To:** "Brooks, Phillip" <[Brooks.Phillip@epa.gov](mailto:Brooks.Phillip@epa.gov)>, "Stewart, Lori"

<Stewart.Lori@epa.gov>

**Subject: RE: talk with Tom Burke**

The attached briefing paper (from a meeting earlier this year with Stan) provides a good summary of the history on NAEMS.

**Ex. 5 - Deliberative Process**

## **Ex. 5 - Deliberative Process**

Hope this helps. Let me know if you have questions.

Mike

**From:** Brooks, Phillip

**Sent:** Monday, November 30, 2015 9:09 AM

**To:** Stewart, Lori <Stewart.Lori@epa.gov>

**Cc:** Koerber, Mike <Koerber.Mike@epa.gov>

**Subject:** RE: talk with Tom Burke

Thank you Lori.

Mike, any insights appreciated.

Phill

**From:** Stewart, Lori  
**Sent:** Monday, November 30, 2015 9:07 AM  
**To:** Brooks, Phillip <Brooks.Phillip@epa.gov>  
**Cc:** Koerber, Mike <Koerber.Mike@epa.gov>  
**Subject:** FW: talk with Tom Burke

## Ex. 5 - Deliberative Process

**From:** McCabe, Janet  
**Sent:** Wednesday, November 25, 2015 1:31 PM  
**To:** Stewart, Lori <Stewart.Lori@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>; Hengst, Benjamin <Hengst.Benjamin@epa.gov>; DeMocker, Jim <DeMocker.Jim@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>  
**Subject:** talk with Tom Burke

Folks—I had a good talk with Tom Burke just now, and am reporting out with some requests for followup.

## Ex. 5 - Deliberative Process

## **Ex. 5 - Deliberative Process**

I hope this is all clear. Thanks.

**To:** Nguyen, Quoc[Nguyen.Quoc@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Fri 12/4/2015 9:43:34 PM  
**Subject:** FW: Draft Waiver Memo  
HSUS FOIA Legal Fee Waiver Memo - Draft.docx

I made some tweaks to the earlier draft and caught some typos.

Hang in there and rest up this weekend!

Tim

---

Timothy J. Sullivan  
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**From:** Sullivan, Tim  
**Sent:** Friday, December 04, 2015 4:43 PM  
**To:** Fogarty, Johnpc <Fogarty.Johnpc@epa.gov>  
**Subject:** Draft Waiver Memo

John:

The draft memo is attached for your initial review. Please let me know if you have any comments before I prepare it for routing.

Thanks, and have a nice weekend.

Tim

---

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Office of Civil Enforcement

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**To:** Rainer Volkamer[rainer.volkamer@colorado.edu]; Walker, JohnT[Walker.Johnt@epa.gov]; Thompson, Edgar[thompson.edgar@epa.gov]  
**From:** Thoma, Eben  
**Sent:** Thur 5/19/2016 6:03:40 PM  
**Subject:** RE: Fwd: FTS - mobile SOF - FRAPPE  
[AWMA OTM 33\\_033015.pdf](#)  
[2012-A-21-AWMA\\_033012.pdf](#)  
[es503070q.pdf](#)  
[OTM33B\\_2015.pdf](#)  
[Albertson mobile methane\\_OTM 33D\\_related.pdf](#)

Thanks Rainer,

Please see the following link for OTM 33 and 33A methods  
(<https://www3.epa.gov/ttnemc01/prelim.html>) and a couple of papers are attached.

I will talk with Jon and we need to reconnect early next week.

Eben

**From:** Rainer Volkamer [mailto:rainer.volkamer@colorado.edu]  
**Sent:** Thursday, May 19, 2016 12:12 PM  
**To:** Thoma, Eben <Thoma.Eben@epa.gov>; Walker, JohnT <Walker.Johnt@epa.gov>; Thompson, Edgar <thompson.edgar@epa.gov>  
**Subject:** Re: Fwd: FTS - mobile SOF - FRAPPE

GMD Poster by Randal Chiu - Methane source apportionment using stationary VCD column enhancement.

On 5/19/2016 9:31 AM, Rainer Volkamer wrote:

Hi Thoma - cc John, Edgar



I attach slides from a recent presentation for discussion. Please do not distribute these further - numbers were preliminary at the time.

Could you please resend the dial-in information for our telecon?

Talk to you later (in 30mins),

-Rainer

On 5/3/2016 2:23 PM, Thoma, Eben wrote:

Rainer,

This week is not good as John Walker is in the field. Lets try the same time next week. I will send out an invite.

Eben

**From:** Rainer Volkamer [<mailto:rainer.volkamer@colorado.edu>]  
**Sent:** Tuesday, May 03, 2016 4:07 PM  
**To:** Thoma, Eben <[Thoma.Eben@epa.gov](mailto:Thoma.Eben@epa.gov)>; Walker, JohnT <[Walker.Johnt@epa.gov](mailto:Walker.Johnt@epa.gov)>; Thompson, Edgar <[thompson.edgar@epa.gov](mailto:thompson.edgar@epa.gov)>  
**Subject:** Re: Fwd: FTS - mobile SOF - FRAPPE

Ok - how about THU 9am MDT / 11am EDT?

Another time later this week could work as well.

-Rainer

On 5/3/2016 9:47 AM, Thoma, Eben wrote:

Hi Rainer,

We definitely need to have a call. We are very interested in discussing. Copying some colleagues here.

Eben

**From:** Rainer Volkamer [mailto:rainer.volkamer@colorado.edu]  
**Sent:** Tuesday, May 03, 2016 11:32 AM  
**To:** Thoma, Eben <Thoma.Eben@epa.gov>  
**Subject:** Re: Fwd: FTS - mobile SOF - FRAPPE

Hi Eben,

we are preparing a paper on the mobile SOF system. It worked well during FRAPPE, and we now have first results consolidated - on NH<sub>3</sub>, NO<sub>x</sub> fluxes from Dairy farms and CAFO, and also mapping of C<sub>2</sub>H<sub>6</sub> VCDs on the regional scale. The results are striking - and reveal potentially some severe underestimate in the emissions from agricultural sources (see the attached abstract from the 3rd year talk of my student Natalie Kille).

I am looking for a contact at EPA who knows the details of how the NEI2011 for NH<sub>3</sub> is constructed. Do you know whom to contact?

And do you think there would be interest at EPA that we continue this work? I see several possible ways to follow up on this initial study... maybe we could talk again on the phone. Are you attending ISMS, other conferences this summer?

-Rainer

## COMPREHENSIVE EXAM II - Natalie Kille

Advisor: Dr. Rainer Volkamer DATE and TIME: Thursday, April 28, 2016 at 3:00pm LOCATION: Ekeley S274 (CIRES Fellows Room TITLE: The CU Mobile Solar Occultation Flux instrument: measurements of NH<sub>3</sub>, NO<sub>2</sub> and C<sub>2</sub>H<sub>6</sub> ABSTRACT: We describe the University of Colorado mobile Solar Occultation Flux (CU mobile SOF) instrument. The instrument consists of a digital mobile solar tracker that is

coupled to a Fourier Transform Spectrometer (FTS, 0.5 cm<sup>-1</sup> resolution), and a UV-Visible Spectrometer (UV-Vis, 0.55 nm resolution). The instrument is used to simultaneously measure the absorption of ammonia (NH<sub>3</sub>), ethane (C<sub>2</sub>H<sub>6</sub>), and nitrogen dioxide (NO<sub>2</sub>) along the direct solar beam. These direct sun observations provide high photon flux and enable measurements of vertical column densities (VCDs) with geometric air mass factors, high temporal (2 sec) and spatial (5-19 m) resolution from a moving laboratory. It is shown that the instrument line shape (ILS) of the FTS is independent of the azimuth and elevation angle pointing of the solar tracker. Further, collocated measurements next to a high resolution FTS at the National Center for Atmospheric Research (HR-NCAR-FTS) show that the CU mobile SOF measurements of NH<sub>3</sub> and C<sub>2</sub>H<sub>6</sub> are both precise and accurate, and within low detection limits of 0.10 x 10<sup>16</sup> molecules/cm<sup>2</sup> for NH<sub>3</sub>, 0.13 x 10<sup>16</sup> molecules/cm<sup>2</sup> for C<sub>2</sub>H<sub>6</sub>, and ~5 % accuracy (both gases) at high signal to noise. For NO<sub>2</sub> the detection limit is 0.07 x 10<sup>16</sup> molecules/cm<sup>2</sup> (Baidar et al., 2016). The instrument was deployed aboard a ground-based mobile laboratory during the Front Range Air Pollution and Photochemistry Experiment (FRAPPE) from 21 July to 3 September 2014 in Colorado to quantify emission fluxes from agricultural sources (feedlots; NH<sub>3</sub>, NO<sub>2</sub>), and oil and natural gas (ONG) operations (C<sub>2</sub>H<sub>6</sub>). The campaign median (maximum, minimum) VCD values were 4.3 (45, 0.5) x 10<sup>16</sup> molecules/cm<sup>2</sup> for NH<sub>3</sub>, 0.4 (2.2, 0.06) x 10<sup>16</sup> molecules/cm<sup>2</sup> for NO<sub>2</sub>, and 3.5 (7.7, 1.5) x 10<sup>16</sup> molecules/cm<sup>2</sup> for C<sub>2</sub>H<sub>6</sub>. We calculate structure functions, which describe the variability of a gas column over distance, and find large variability in the NH<sub>3</sub> VCDs. To the best of our knowledge, ours are the first structure function calculations based on NH<sub>3</sub>, C<sub>2</sub>H<sub>6</sub>, and NO<sub>2</sub> column variability, which is helpful for the interpretation of satellite data. The trace gas emission fluxes of NH<sub>3</sub> and C<sub>2</sub>H<sub>6</sub> and production rates of NO<sub>2</sub> are calculated using the divergence flux method, i.e., the closed-loop vector integral of the VCD times wind speed along the drive track. Concentrated animal feeding operations (CAFO) were found to be a source for NH<sub>3</sub> and NO<sub>x</sub> (sum of NO and NO<sub>2</sub>). Excellent reproducibility is found for the NH<sub>3</sub> and NO<sub>x</sub> flux from a ~50,000 cows CAFO that was probed on two consecutive days. Comparison to an emission inventory indicates that both the emission flux of NH<sub>3</sub> and NO<sub>x</sub> is underestimated by a factor greater than 25.

On 4/24/2014 5:38 PM, Thoma, Eben wrote:

Hi Rainer,

I am glad you were able to get the unit. Sorry I dropped the ball with John but will re initiate next week. I don't know if any funding is available at the moment but we are interested in learning more. This is a worthwhile conversation I am sure.

Thanks,

Eben

---

**From:** Rainer Volkamer <Rainer.Volkamer@Colorado.EDU>  
**Sent:** Thursday, April 24, 2014 5:17:33 PM  
**To:** Thoma, Eben  
**Subject:** Fwd: FTS - mobile SOF - FRAPPE

Eben - any chance there will be follow up on a pilot to look at NH3 emissions using mobile SOF?

The spectrometer is now fully supported (see my email below). We anticipate deploying it this summer. I liked your idea for a NH3 pilot case study to demonstrate this new capability. Indeed, now that the spectrometer is fully funded, we are only looking to support manpower to setup an NH3 optimized retrieval. Thanks for initiating some conversations along these lines with your colleague.

**Ex. 5 - Deliberative Process**

## **Ex. 5 - Deliberative Process**

Thanks again,  
-Rainer

----- Original Message -----

**Subject:** FTS - mobile SOF - FRAPPE  
**Date:** Thu, 24 Apr 2014 15:10:34 -0600  
**From:** Rainer Volkamer <rainer.volkamer@colorado.edu>  
**To:** Tarek Sammakia <Sammakia@colorado.edu>, "Abdalati, Waleed" <waleed.abdalati@colorado.edu>, Maggie Tolbert <Margaret.tolbert@colorado.edu>, Joost deGouw <Joost.deGouw@noaa.gov>, "Pierce - CDPHE, Gordon" <gordon.pierce@state.co.us>  
**CC:** Frank M. Flocke <ffl@ucar.edu>, Gabi Pfister <pfister@ucar.edu>, Crawford, James H. (LARC-E303) <james.h.crawford@nasa.gov>

Dear Gordon, Tarek, Waleed, Maggie, Joost, this is to let you know that the FTIR spectrometer is now fully supported, and scheduled to arrive in Boulder on 22 May. The final funding distribution of this 122k USD purchase is 73.4k USD (Volkamer), 35k USD (CDPHE), 8k USD (Chemistry), 3.6k USD (CIRES), 2k USD (ECD). Thank you for your efforts and contributions in helping to make this purchase possible! We

are currently in the process of modifying a mobile trailer for a first deployment during the FRAPPE project this summer. The development of mobile SOF is now happening, and I expect it soon to be manpower limited. As you see future opportunities for proposals/funding calls in the area of agricultural emissions, biofuels, or climate gases please pass them on. Also, any interesting newspaper articles that you might be aware of are most welcome. I attach two related articles that I found interesting below. Many thanks, and best regards,-  
Rainer  
The White House recently outlined it's strategy to Cut Methane Emissions:<http://www.whitehouse.gov/the-press-office/2014/02/28/fact-sheet-climate-action-plan-strategy-cut-methane-emissions> New EPA regulations are scheduled to come into effect in 2015 to limit emissions from hydraulic fracturing:<http://inhabitat.com/epa-introduces-regulations-limiting-emissions-from-hydraulic-fracturing/epa-introduces-rule-to-limit-voc-emissions-from-fracking-1/> --

Rainer

M. Volkamer, Assistant Professor & CIRES Fellow  
Dept. of Chemistry & Biochemistry; UCB 215  
University of Colorado; Boulder, CO 80309-0215  
Tel: 303-492-1843; Fax: 303-492-5894  
email: Rainer . Volkamer at Colorado . edu  
email for life: rainer at alum . mit . edu  
<http://www.colorado.edu/chemistry/volkamer>  
<http://cires.colorado.edu/people/volkamer>

--  
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email for life: rainer at alum . mit . edu  
<http://ciresgroups.colorado.edu/volkamer/group/TORERO> project:  
[https://www.eol.ucar.edu/field\\_projects/torero](https://www.eol.ucar.edu/field_projects/torero)  
Air-sea exchange special issue: [www.atmos-meas-tech-discuss.net/special\\_issue55.html](http://www.atmos-meas-tech-discuss.net/special_issue55.html)

--  
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Tel: 303-492-1843; Fax: 303-492-5894  
email: Rainer . Volkamer at Colorado . edu  
email for life: rainer at alum . mit . edu  
<http://ciresgroups.colorado.edu/volkamer/group/TORERO> project:  
[https://www.eol.ucar.edu/field\\_projects/torero](https://www.eol.ucar.edu/field_projects/torero)  
Air-sea exchange special issue: [www.atmos-meas-tech-discuss.net/special\\_issue55.html](http://www.atmos-meas-tech-discuss.net/special_issue55.html)

-- \_\_\_\_\_ Rainer M.  
Volkamer, Associate Professor & CIRES FellowDept. of Chemistry &  
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eduemail for life: rainer at alum . mit . edu  
<http://ciresgroups.colorado.edu/volkamergroup/TORERO> project:  
[https://www.col.ucar.edu/field\\_projects/torero](https://www.col.ucar.edu/field_projects/torero)Air-sea exchange special  
issue: [www.atmos-meas-tech-](http://www.atmos-meas-tech-discuss.net/special_issue55.html)  
[discuss.net/special\\_issue55.html](http://www.atmos-meas-tech-discuss.net/special_issue55.html)

---

-- \_\_\_\_\_ Rainer M. Volkamer,  
Associate Professor & CIRES FellowDept. of Chemistry & Biochemistry; UCB  
215University of Colorado; Boulder, CO 80309-0215Tel: 303-492-1843; Fax: 303-  
492-5894email: Rainer . Volkamer at Colorado . eduemail for life: rainer at  
alum . mit . edu <http://ciresgroups.colorado.edu/volkamergroup/TORERO> project:  
[https://www.col.ucar.edu/field\\_projects/torero](https://www.col.ucar.edu/field_projects/torero)Air-sea exchange special issue:  
[www.atmos-meas-tech-](http://www.atmos-meas-tech-discuss.net/special_issue55.html)  
[discuss.net/special\\_issue55.html](http://www.atmos-meas-tech-discuss.net/special_issue55.html)

---

**To:** Sasser, Erika[Sasser.Erika@epa.gov]  
**Cc:** Hetes, Bob[Hetes.Bob@epa.gov]; Tennant, Ginger[Tennant.Ginger@epa.gov]; Schrock, Bill[Schrock.Bill@epa.gov]; Scavo, Kimber[Scavo.Kimber@epa.gov]; Wesson, Karen[Wesson.Karen@epa.gov]; Keating, Martha[keating.martha@epa.gov]  
**From:** Waite, Randy  
**Sent:** Wed 11/4/2015 8:20:27 PM  
**Subject:** Update on Ammonia Petition  
[Update on Ammonia Petition.docx](#)

Hi Erika,

Attached is a brief update on the petition to list ammonia as a criteria pollutant. Please let me know if I can provide further information.

Thanks,

Randy

Randy Waite

U.S. EPA, C504-04

Office of Air Quality Planning and Standards

Health and Environmental Impacts Division

RTP, NC 27711

919-541-5447

Room C561-i

[waite.randy@epa.gov](mailto:waite.randy@epa.gov)

**To:** Wesson, Karen[Wesson.Karen@epa.gov]  
**From:** Riha, Kristin  
**Sent:** Mon 7/18/2016 3:47:30 PM  
**Subject:** FOR REVIEW: Updated Petition Response  
[CAFO Draft Response to Ammonia Petition\\_v4+SJJ Comments 7 5 16\\_071816.docx](#)  
[CAFO Draft Response to Ammonia Petition\\_v4+SJJ Comments 7 5 16\\_071816\\_CLEAN.docx](#)

Hi Karen, Pls see attached. There are two copies—one with lots of redlines and comment bubbles from Scott, where I also track how I incorporated the comments; one that's "clean" (no redlines) with just the remaining comment bubbles (ones we'd leave in as placeholders for the entire review group, and ones that are for you to consider).

I hope this helps!

K

Kristin Riha

U.S. EPA OAQPS/HEID

Ambient Standards Group

Phone: 919-541-2031



**To:** Wesson, Karen[Wesson.Karen@epa.gov]  
**From:** Riha, Kristin  
**Sent:** Mon 7/11/2016 7:34:41 PM  
**Subject:** Updated per Scott's input: Draft ammonia petition response  
CAFO Draft Response to Ammonia Petition\_v4+SJJ Comments 7 5 16\_071116.docx

Hi Karen, the comment bubbles from Scott are still in here so you can see where the redlined changes match up with the comments. For those cases where I didn't make redlined changes, we'll need to keep the comment bubbles as consideration for the larger group. There are also a few new comment bubbles in here from me for you to consider ☺ After opening the file, if you have any questions, please certainly let me know!

Thanks!

K

Kristin Riha

U.S. EPA OAQPS/HEID

Ambient Standards Group

Phone: 919-541-2031

**To:** Wesson, Karen[Wesson.Karen@epa.gov]  
**From:** Riha, Kristin  
**Sent:** Thur 6/23/2016 4:48:50 PM  
**Subject:** FOR REVIEW: New version of petition response  
Draft Response to Ammonia Petition\_v3.docx

Hi Karen, I beefed up the summary and some of the response language. There are some comment bubbles in here for you to consider as well. Oh, and while I was at it, I had Patrick review the language re: the PM impl rule—that language has been revised with his input ☺

I think it's ready for you to tinker now!

Thanks,

K

Kristin Riha

U.S. EPA OAQPS/HEID

Ambient Standards Group

Phone: 919-541-2031

**To:** Wesson, Karen[Wesson.Karen@epa.gov]  
**From:** Riha, Kristin  
**Sent:** Thur 6/23/2016 2:54:54 PM  
**Subject:** see p47  
[petitionammonia-as-criteria-pollutant04062011\\_59802.pdf](#)

Kristin Riha

U.S. EPA OAQPS/HEID

Ambient Standards Group

Phone: 919-541-2031

**To:** Wesson, Karen[Wesson.Karen@epa.gov]  
**From:** Riha, Kristin  
**Sent:** Thur 6/23/2016 1:32:32 PM  
**Subject:** FOR REVIEW: Draft Petition Response  
Draft Response to Ammonia Petition\_v2.docx

Hi Karen, I've done my best to incorporate your feedback from yesterday, but would certainly appreciate another look to ensure I haven't missed anything! I've got a few additional comment bubbles in here for you to consider as well ☺ Timeline-wise, do you think we could aim to get this to Scott by early next week, with the 4<sup>th</sup> coming up and you and I being out?

Thanks!

K

Kristin Riha

U.S. EPA OAQPS/HEID

Ambient Standards Group

Phone: 919-541-2031

**To:** Wesson, Karen[Wesson.Karen@epa.gov]  
**From:** Riha, Kristin  
**Sent:** Mon 6/20/2016 7:30:34 PM  
**Subject:** For Review and Discussion: Initial draft petition response  
[petitionammonia-as-criteria-pollutant04062011\\_59802.pdf](#)  
[Draft Response to Ammonia Petition.docx](#)

Hi Karen, lots of comment bubbles in here, some of which are for Scott Jordan re: how to reference things. I sought out the original petition in order to generate the summary of the petition and list of petitioners, address, etc. I've included the petition as an attachment here so that you have it as well.

Thanks!

Talk to you soon,

K

Kristin Riha

U.S. EPA OAQPS/HEID

Ambient Standards Group

Phone: 919-541-2031

**To:** Tennant, Ginger[Tennant.Ginger@epa.gov]  
**From:** Waite, Randy  
**Sent:** Tue 11/3/2015 8:12:23 PM  
**Subject:** FW: Ammonia  
ENV DEFENSE-#719962-v1-  
DN\_13\_Memorandum\_in\_opposition\_to\_re\_\_1f\_\_MOTION\_to\_Dismiss\_for\_Lack\_of\_Jurisdiction\_or\_for\_Failure\_t.pdf

FYI 3

Randy Waite

U.S. EPA, C504-04

Office of Air Quality Planning and Standards

Health and Environmental Impacts Division

RTP, NC 27711

919-541-5447

Room C561-i

waite.randy@epa.gov

**From:** Anderson, Lea  
**Sent:** Tuesday, November 03, 2015 10:52 AM  
**To:** Waite, Randy <Waite.Randy@epa.gov>  
**Subject:**

## Ex. 5 - Deliberative Process

**To:** Jordan, Scott[Jordan.Scott@epa.gov]  
**Cc:** Zenick, Elliott[Zenick.Elliott@epa.gov]; Orlin, David[Orlin.David@epa.gov]; Anderson, Lea[anderson.lea@epa.gov]; Simons, Andrew[Simons.Andrew@epa.gov]  
**From:** Green, Noelle  
**Sent:** Wed 12/2/2015 5:57:13 PM  
**Subject:** RE: Favorable Decision in EIP v. EPA (CAFO/Ammonia Criteria Pollutant Listing Litigation)

Thanks for flagging this, Scott.

Noelle Green

Attorney-Advisor

Cross-Cutting Issues Law Office

Office of General Counsel

U.S. Environmental Protection Agency

(202) 564-1236

green.noelle@epa.gov

**From:** Jordan, Scott  
**Sent:** Wednesday, December 02, 2015 12:47 PM  
**To:** Simons, Andrew <Simons.Andrew@epa.gov>; Green, Noelle <Green.Noelle@epa.gov>  
**Cc:** Zenick, Elliott <Zenick.Elliott@epa.gov>; Orlin, David <Orlin.David@epa.gov>; Anderson, Lea <anderson.lea@epa.gov>  
**Subject:** FW: Favorable Decision in EIP v. EPA (CAFO/Ammonia Criteria Pollutant Listing Litigation)

Andy and Noelle

FYI - I copied you on this email because of the court's discussion of the relationship of APA unreasonable delay claims and CAA 304(a) unreasonable delay claims, which may have implications beyond the CAA. Please let me know if you have any questions.

Scott Jordan

Air and Radiation Law Office

Office of General Counsel

202-564-7508

**From:** Jordan, Scott

**Sent:** Wednesday, December 02, 2015 12:44 PM

**To:** McCabe, Janet <McCabe.Janet@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Jordan, Deborah <Jordan.Deborah@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Hamett, Bill <Hamett.Bill@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>

**Cc:** Garbow, Avi <Garbow.Avi@epa.gov>; Shenkman, Ethan <Shenkman.Ethan@epa.gov>; OGC ARLO <OGC\_ARLO@epa.gov>; Simons, Andrew <Simons.Andrew@epa.gov>; Green, Noelle <Green.Noelle@epa.gov>

**Subject:** Favorable Decision in EIP v. EPA (CAFO/Ammonia Criteria Pollutant Listing Litigation)

On December 1, 2015, District Judge Amy Berman Jackson issued the attached favorable decision granting our motion to dismiss an unreasonable delay claim seeking a NAAQS for ammonia. Environmental Integrity Project v. EPA (No. 15-0139 D.D.C.). Judge Jackson found that the court lacked jurisdiction because plaintiffs' unreasonable delay complaint should have been brought under CAA 304(a) rather than as an Administrative Procedure Act claim and because it was not preceded by the 180-day notice that is required under CAA 304(a).

Background: Plaintiffs filed this case under the APA alleging that EPA had unreasonably delayed responding to plaintiffs' 2011 petition to list ammonia as a criteria pollutant under the CAA and to then establish a NAAQS for ammonia. In response, we filed a motion to dismiss arguing that, although the APA creates the duty to respond to a petition within a reasonable time, the applicable waiver of sovereign immunity for an unreasonable delay action based on agency inaction under the CAA is found in CAA 304(a) and thus this action is governed by the 180-day notice requirement in that provision.

Decision: In granting our motion to dismiss, the court held that (1) although the duty to act on a



petition for rulemaking within a reasonable time arises under the APA, it is CAA 304(a) that provides the cause of action for a claim that EPA has unreasonably delayed responding to a petition for rulemaking under the CAA, and (2) plaintiffs failed to provide the 180-day notice that is a “mandatory condition precedent” for invoking the waiver of sovereign immunity granted under CAA 304(a). The court further held that plaintiffs cannot invoke the waiver of sovereign immunity in the APA because the claims under the APA are only available where “there is no other adequate remedy in a court” (see 5 USC 704) and CAA 304(a) provides an adequate remedy.

Two Additional Notes:

1. This same issue is currently pending in our motion to dismiss in the related case of *Humane Society of the United States v. EPA*, in which plaintiffs brought an APA claim (and without providing the 180-day notice) alleging that EPA has unreasonably delayed responding to a petition to list CAFOs as a source category under CAA 111. We will be submitting a notice of this decision to the judge in that case, and are expecting a similarly favorable decision in the CAFO/111 case.

2. Plaintiffs have previously stated that, if their APA claim were dismissed, they would serve us with the 180-day notice and pursue their claims as a CAA 304(a) case. So, it is likely that we will see these claims again.

Scott Jordan

Air and Radiation Law Office

Office of General Counsel

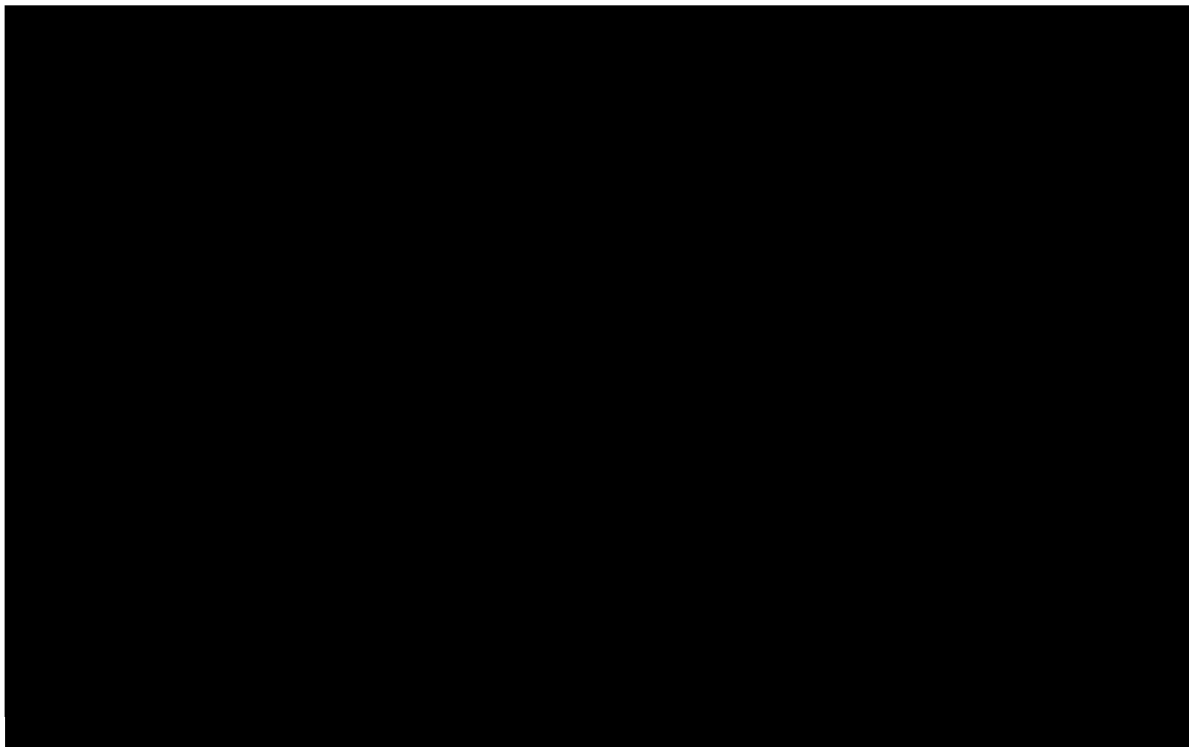
202-564-7508

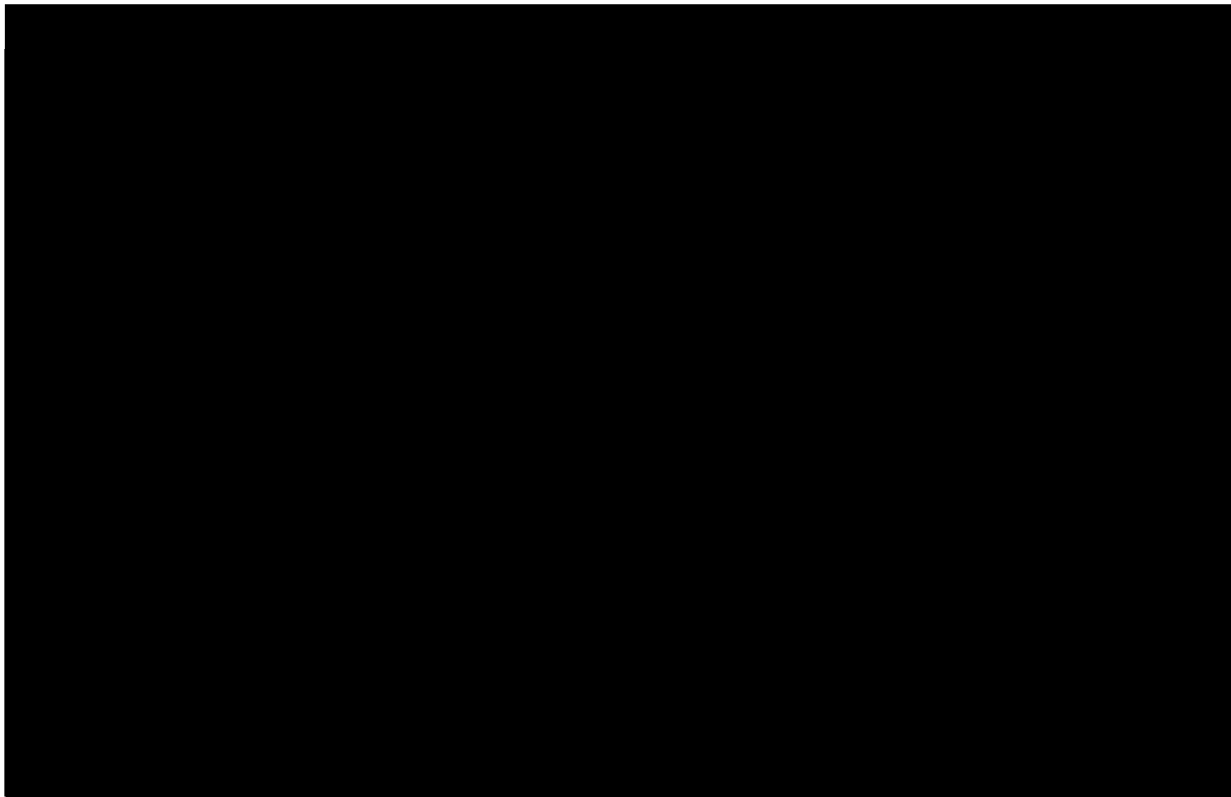
**To:** Jordan, Scott[Jordan.Scott@epa.gov]; Anderson, Lea[anderson.lea@epa.gov]  
**Cc:** Orlin, David[Orlin.David@epa.gov]; Heminger, Justin (ENRD)[Justin.Heminger@usdoj.gov]  
**From:** Zenick, Elliott  
**Sent:** Wed 12/2/2015 5:03:07 PM  
**Subject:** RE: Favorable Decision in EIP v. EPA (CAFO/Ammonia Criteria Pollutant Listing Litigation)

Nothing from me.

**From:** Jordan, Scott  
**Sent:** Wednesday, December 02, 2015 11:53 AM  
**To:** Anderson, Lea <anderson.lea@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>  
**Cc:** Orlin, David <Orlin.David@epa.gov>; Heminger, Justin (ENRD) <Justin.Heminger@usdoj.gov>  
**Subject:** RE: Favorable Decision in EIP v. EPA (CAFO/Ammonia Criteria Pollutant Listing Litigation)

The revision below reflects Lea's edits and shows my edits to the first sentence (in yellow highlight) to address David's comment. Please let me know if you have any further comments, or if this is ready to go out.





Scott Jordan

Air and Radiation Law Office

Office of General Counsel

202-564-7508

**To:** Waite, Randy[Waite.Randy@epa.gov]

**From:** Anderson, Lea

**Sent:** Tue 11/3/2015 3:51:52 PM

ENV DEFENSE-#719962-v1-

DN\_13\_Memorandum\_in\_opposition\_to\_re\_\_11\_\_MOTION\_to\_Dismiss\_for\_Lack\_of\_Jurisdiction\_or\_for\_Failure\_t.pdf

Plaintiff's response,

**Ex. 5 - Attorney Client**

**Ex. 5 - Attorney Client**

**To:** Anderson, Lea[anderson.lea@epa.gov]

**From:** Heminger, Justin (ENRD)

**Sent:** Fri 8/28/2015 7:42:28 PM

**Subject:** RE: CAFO Cases - Surreply Brief

ENV DEFENSE-#711721-v1-COMPLAINT.PDF

ENV DEFENSE-#717968-v1-

DN\_11\_MOTION\_to\_Dismiss\_for\_Lack\_of\_Jurisdiction\_or\_for\_Failure\_to\_State\_a\_Claim\_by\_REGINA\_MCCARTHY\_\_U

ENV DEFENSE-#723475-v1-

DN\_15\_REPLY\_to\_opposition\_to\_motion\_re\_\_11\_\_MOTION\_to\_Dismiss\_for\_Lack\_of\_Jurisdiction\_or\_for\_Failure\_to\_Ste

ENV DEFENSE-#719962-v1-

DN\_13\_Memorandum\_in\_opposition\_to\_re\_\_11\_\_MOTION\_to\_Dismiss\_for\_Lack\_of\_Jurisdiction\_or\_for\_Failure\_to\_State

ENV DEFENSE-#727353-v1-

DN\_17\_SURREPLY\_to\_re\_\_11\_\_MOTION\_to\_Dismiss\_for\_Lack\_of\_Jurisdiction\_or\_for\_Failure\_to\_State\_a\_Claim\_filed\_

Lea,

Thanks for your email. The EIP complaint and motion to dismiss briefing is attached. Plaintiffs filed a surreply, which is why there are four briefs. We have no word from the judge in this case, or in the related Humane Society case. I will be sure to let you and Scott know as soon as I hear anything.

Have a good weekend.

Justin

**From:** Anderson, Lea [mailto:anderson.lea@epa.gov]

**Sent:** Friday, August 28, 2015 3:38 PM

**To:** Heminger, Justin (ENRD) <JHeminger2@ENRD.USDOJ.GOV>

**Subject:** RE: CAFO Cases - Surreply Brief

Justin,

For some reason I cannot find a copy of the original complaint or our motion to dismiss in the Environmental Integrity case. At your leisure, can you send me copies of these?

Ex. 5 - Attorney Client

**Ex. 5 - Attorney Client**

Thanks.

Lea

**From:** Heminger, Justin (ENRD) [mailto:Justin.Heminger@usdoj.gov]  
**Sent:** Wednesday, June 17, 2015 4:41 PM  
**To:** Jordan, Scott; Anderson, Lea  
**Cc:** Purdy, Angeline (ENRD)  
**Subject:** CAFO Cases - Surreply Brief

Scott and Lea,

Here is plaintiffs' motion for leave and surreply. Judge Amy Berman Jackson granted the motion for leave shortly after it was filed this morning, and the brief is now officially lodged with the court.

## Ex. 5 - Attorney Client

Best regards,  
Justin

Justin D. Heminger

Trial Attorney

U.S. Department of Justice

Environment and Natural Resources Division

Environmental Defense Section

601 D Street, N.W., Suite 8000

Washington, DC 20004

Office 202.514.2689

[justin.heminger@usdoj.gov](mailto:justin.heminger@usdoj.gov)

**To:** Harnett, Bill[Harnett.Bill@epa.gov]  
**From:** Scavo, Kimber  
**Sent:** Thur 11/5/2015 12:40:23 PM  
**Subject:** FW: Update on Ammonia Petition  
[Update on Ammonia Petition.docx](#)

Randy did this for Erika....FYI.

Kimber Scavo

Associate Director, Health and Environmental Impacts Division

US EPA/Office of Air Quality Planning and Standards

Mail Code C504-02

109 TW Alexander Drive

RTP, NC 27705

919-541-3354

**From:** Waite, Randy  
**Sent:** Wednesday, November 04, 2015 3:20 PM  
**To:** Sasser, Erika <Sasser.Erika@epa.gov>  
**Cc:** Hetes, Bob <Hetes.Bob@epa.gov>; Tennant, Ginger <Tennant.Ginger@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>; Scavo, Kimber <Scavo.Kimber@epa.gov>; Wesson, Karen <Wesson.Karen@epa.gov>; Keating, Martha <keating.martha@epa.gov>  
**Subject:** Update on Ammonia Petition

Hi Erika,

Attached is a brief update on the petition to list ammonia as a criteria pollutant. Please let me know if I can provide further information.

Thanks,

Randy



Randy Waite

U.S. EPA, C504-04

Office of Air Quality Planning and Standards

Health and Environmental Impacts Division

RTP, NC 27711

919-541-5447

Room C561-i

[waite.randy@epa.gov](mailto:waite.randy@epa.gov)

## UPDATE on AMMONIA PETITION

- April 2011 petition to regulate ammonia as a criteria pollutant under CAA sections 108 and 109.
- Petitioners are: Environmental Integrity Project, Association of Irrigated Residents, Caballo Concerned Citizens Group, Center for Food Safety, Citizens for Pennsylvania's Future, Clean Wisconsin, Crawford Stewardship Project, Environmentally Concerned Citizens of South Central Michigan, Food and Water Watch, the Humane Society of the U.S., Illinois Citizens for Clean Air and Water, Iowa Citizens for Community Improvement, Johns Hopkins Center for a Livable Future, Midwest Environmental Advocates, Northwest Environmental Defense Center, Rio Valle Concerned Citizens, Sierra Club, Socially Responsible Agricultural Project, Sustain Rural Wisconsin Network, Vernon County Alliance Concerned with Environmental Safety, and Waterkeeper Alliance.
- Petitioners argue that ammonia endangers human health and public welfare, that CAFOs constitute numerous stationary sources, and that EPA must issue an endangerment finding.

### **Ex. 5 - Deliberative Process**

- EPA conveyed decision about joint consideration of petitions to EIP in July 2013. EIP disagreed with the approach and then submitted a FOIA request for both petitions.
- EIP filed an unreasonable delay suit in spring 2015. EPA responded in April with a motion to dismiss based on lack of 180 day Notice of Intent to sue. EIP argued that they are filing under the Administrative Procedures Act because listing of a new pollutant is discretionary and CAA 304(a), requiring a 180 day NOI, applies only to non-discretionary actions. If court rules that this is non-discretionary, they are happy to withdraw and provide 180 day NOI.
- EPA responded arguing that the CAAA of 1990 applied to both discretionary and non-discretionary actions and that Congress intended to provide EPA time to take action and then, if necessary, have the district courts handle the case instead of the court of appeals. EPA is still awaiting the ruling.

## CAFOs

- September 2010 petition to list CAFOs under CAA section 111(B). Being handled by SPPD-NRG.
- Pollutants of concern: GHGs (CH<sub>4</sub>, N<sub>2</sub>O), H<sub>2</sub>S, NH<sub>3</sub>, PM, VOCs.
- Petitioners are: Humane Society of the U.S. (HSUS), Association of Irrigated Residents, Center on Race, Poverty, and the Environment (CRPE), Clean Air Task Force, Dairy Education Alliance, El Comité Para el Bienestar de Earlimart, Environmental Integrity Project, Friends of the Earth, The Sierra Club, and Waterkeeper Alliance.

### **Ex. 5 - Deliberative Process**

**To:** Riha, Kristin[Riha.Kristin@epa.gov]  
**From:** Wesson, Karen  
**Sent:** Thur 6/30/2016 7:29:53 PM  
**Subject:** nh3 petition  
Draft Response to Ammonia Petition\_v3\_kw.docx

**From:** Dunkins, Robin

**Location:** Ex. 6 - Personal Privacy

**Importance:** Normal

**Subject:** NACAA Agriculture Committee meeting

**Start Date/Time:** Tue 4/19/2016 7:00:00 PM

**End Date/Time:** Tue 4/19/2016 8:00:00 PM

**TO: NACAA AGRICULTURE COMMITTEE**

This is a reminder that the next NACAA Agriculture Committee call will take place today, **April 19 from 3:00 - 4:00 p.m. Eastern**. Presentation materials for the call may be accessed below or through the following agenda: <http://www.4cleanair.org/sites/default/files/Documents/16-04-19AgricultureCommitteeAgenda.pdf>

Please use the following call-in information to attend: Ex. 6 - Personal Privacy

**Presentation Materials**

U.S. Department of Agriculture Air Quality Task Force Update (*Merilyn Hough, Lane County, Oregon*)

- [http://www.4cleanair.org/sites/default/files/Documents/MH\\_combined\\_PDF\\_April2016.pdf](http://www.4cleanair.org/sites/default/files/Documents/MH_combined_PDF_April2016.pdf)

The Exceptional Events Rule and Role of Fire on the Landscape (*Pete Lahm, U.S. Forest Service*)

- [http://www.4cleanair.org/sites/default/files/Documents/Lahm\\_4\\_19\\_16.pdf](http://www.4cleanair.org/sites/default/files/Documents/Lahm_4_19_16.pdf)

## UPDATE on AMMONIA PETITION

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- EPA responded arguing that the CAAA of 1990 applied to both discretionary and non-discretionary actions and that Congress intended to provide EPA time to take action and then, if necessary, have the district courts handle the case instead of the court of appeals. EPA is still awaiting the ruling.

## CAFOs

- September 2010 petition to list CAFOs under CAA section 111(B). Being handled by SPPD-NRG.
- Pollutants of concern: GHGs (CH<sub>4</sub>, N<sub>2</sub>O), H<sub>2</sub>S, NH<sub>3</sub>, PM, VOCs.
- Petitioners are: Humane Society of the U.S. (HSUS), Association of Irrigated Residents, Center on Race, Poverty, and the Environment (CRPE), Clean Air Task Force, Dairy Education Alliance, El Comité Para el Bienestar de Earlimart, Environmental Integrity Project, Friends of the Earth, The Sierra Club, and Waterkeeper Alliance.

## Ex. 5 - Deliberative Process

**To:** Zwicke, Greg - NRCS, Fort Collins, CO[greg.zwicke@ftc.usda.gov]  
**Cc:** WangLi, Lingjuan[WangLi.Lingjuan@epa.gov]; Dunkins, Robin[Dunkins.Robin@epa.gov]; Schrock, Bill[Schrock.Bill@epa.gov]; greg.johnson@por.usda.gov[greg.johnson@por.usda.gov]  
**From:** Lingjuan Wang Li  
**Sent:** Thur 8/27/2015 3:18:43 PM  
**Subject:** Re: "Reference Guide to AFO Air Emission BMPs"\_Working Plan

Greg:

First of all, Happy Birthday!!!

For some reason your message to my EPA email address did not reach me, but I got it at my NCSU address, therefore I am replying with my NCSU account.

As for the review of my working plan, please take your time. I surely understand your tight schedule, and it will be fine with I get your comment later. It won't delay me anything. I will incorporate your comments later on without any problem.

Thanks and enjoy this very special day of the year :-)

Ling

-----

Lingjuan (Ling) Wang Li, Ph.D.

Visiting Scientist

Natural Resources Group (NRG)

Sector Policies and Programs Division (SPPD)

Office of Air Quality Planning and Standards (OAQPS)

Environmental Protection Agency (EPA)

109 TW Alexander Dr. BldgE.

RTP, NC 27711

Email: [WangLi.Lingjuan@epa.gov](mailto:WangLi.Lingjuan@epa.gov)

Phone: [919-541-1339](tel:919-541-1339)

Associate Professor

Department of Biological and Agricultural Engineering

North Carolina State University

3110 Faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)

Phone: [919-515-6762](tel:919-515-6762)

<http://www.bae.ncsu.edu/topic/airquality/>

<http://www.bae.ncsu.edu/people/faculty/lwang5/>

On Thu, Aug 27, 2015 at 10:01 AM, Zwicke, Greg - NRCS, Fort Collins, CO  
<[greg.zwicke@fic.usda.gov](mailto:greg.zwicke@fic.usda.gov)> wrote:

Thanks for this, Ling, and I'm glad to hear you are having fun. My plan is to review this tomorrow and get you some feedback. I have a few high-priority items that I need to knock out today, so tomorrow will be the earliest I can spend some good time reviewing your plan.

Thanks,

Greg

\*\*\*\*\*

Greg Zwicke, P.E.

Air Quality Engineer

Air Quality and Atmospheric Change Team

USDA-NRCS

West National Technology Support Center

2150 Centre Avenue

Building A, Suite 231

Fort Collins, CO 80526

Phone: (970) 295-5621

E-mail: [greg.zwicke@ftc.usda.gov](mailto:greg.zwicke@ftc.usda.gov)

\*\*\*\*\*

**From:** WangLi, Lingjuan [mailto:[WangLi.Lingjuan@epa.gov](mailto:WangLi.Lingjuan@epa.gov)]  
**Sent:** Wednesday, August 26, 2015 2:17 PM  
**To:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>; Johnson, Greg - NRCS, Portland, OR <[Greg.Johnson@por.usda.gov](mailto:Greg.Johnson@por.usda.gov)>; Zwicke, Greg - NRCS, Fort Collins, CO <[greg.zwicke@ftc.usda.gov](mailto:greg.zwicke@ftc.usda.gov)>  
**Cc:** [lwang5@ncsu.edu](mailto:lwang5@ncsu.edu)  
**Subject:** "Reference Guide to AFO Air Emission BMPs"\_Working Plan

**Robin and Bill:**

Attached please find my tentative working plan I mentioned at the staff meeting earlier this afternoon. Please advise if I miss anything important, or if I should take a different approach to addressing the issue. I am flexible to make any changes since I am just at the beginning.

**Greg & Greg:**

Howdy! Today is my 3<sup>rd</sup> day with Robin's group. I enjoy the time here and have been trying to get myself adjusted to the new system. I am getting there ☺.

I have carefully read the reference guide you all developed for the cropping system. It provides me some ideas to plan the one for AFOs. Attached file list my current thinking of ways to do this. The plan is tentative, and subject to changes if needed. So, any of your advice will be greatly appreciated.



I personally think this plan is somewhat ambitious, but I am determined to do my best.

Thanks

Ling

-----

Lingjuan (Ling) Wang Li

Visiting Scientist

Sector Policies and Programs Division

Office of Air Quality Planning and Standards

Environmental Protection Agency

109 TW Alexander Dr. BldgE.

RTP, NC 27711

Phone: 919-541-1339

Associate Professor

Department of Biological and Agricultural Engineering

North Carolina State University

3110 faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: Lwang5@ncsu.edu

Phone: 919-515-6762

**To:** Schrock, Bill[Schrock.Bill@epa.gov]; Dunkins, Robin[Dunkins.Robin@epa.gov];  
greg.johnson@por.usda.gov[greg.johnson@por.usda.gov];  
greg.zwicke@ftc.usda.gov[greg.zwicke@ftc.usda.gov]  
**Cc:** lwang5@ncsu.edu[lwang5@ncsu.edu]  
**From:** WangLi, Lingjuan  
**Sent:** Thur 8/27/2015 1:50:04 PM  
**Subject:** RE: "Reference Guide to AFO Air Emission BMPs"\_Working Plan

Bill;

Great comments! I will keep them in mind and move this work forward as quick as I can and then get more comments from you all along the way.

Thanks

Ling

-----

Lingjuan (Ling) Wang Li

Visiting Scientist

Natural Resources Group (NRG)

Sector Policies and Programs Division (SPPD)

Office of Air Quality Planning and Standards (OAQPS)

Environmental Protection Agency (EPA)

109 TW Alexander Dr. BldgE.

RTP, NC 27711

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Associate Professor

Department of Biological and Agricultural Engineering

North Carolina State University

3110 faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)

Phone: 919-515-6762

<http://www.bae.ncsu.edu/topic/airquality/>

<http://www.bae.ncsu.edu/people/faculty/lwang5/>

**From:** Schrock, Bill

**Sent:** Thursday, August 27, 2015 9:36 AM

**To:** WangLi, Lingjuan <[WangLi.Lingjuan@epa.gov](mailto:WangLi.Lingjuan@epa.gov)>; Dunkins, Robin  
<[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; [greg.johnson@por.usda.gov](mailto:greg.johnson@por.usda.gov); [greg.zwicke@fic.usda.gov](mailto:greg.zwicke@fic.usda.gov)

**Cc:** [lwang5@ncsu.edu](mailto:lwang5@ncsu.edu)

**Subject:** RE: "Reference Guide to AFO Air Emission BMPs" \_Working Plan

Ling – Attached are a few comments/responses to your questions. I didn't have much to add and thought it looked pretty good. Let me know if you have any questions.

Bill Schrock

U.S. EPA

RTP, NC 27709

(919) 541-5032

(919) 541-3470 (fax)

**From:** WangLi, Lingjuan

**Sent:** Wednesday, August 26, 2015 4:17 PM

**To:** Dunkins, Robin; Schrock, Bill; [greg.johnson@por.usda.gov](mailto:greg.johnson@por.usda.gov); [greg.zwicke@fic.usda.gov](mailto:greg.zwicke@fic.usda.gov)

**Cc:** [lwang5@ncsu.edu](mailto:lwang5@ncsu.edu)

**Subject:** "Reference Guide to AFO Air Emission BMPs" \_Working Plan

**Robin and Bill:**

Attached please find my tentative working plan I mentioned at the staff meeting earlier this afternoon. Please advise if I miss anything important, or if I should take a different approach to addressing the issue. I am flexible to make any changes since I am just at the beginning.

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Howdy! Today is my 3<sup>rd</sup> day with Robin's group. I enjoy the time here and have been trying to get myself adjusted to the new system. I am getting there ☺.

I have carefully read the reference guide you all developed for the cropping system. It provides me some ideas to plan the one for AFOs. Attached file list my current thinking of ways to do this. The plan is tentative, and subject to changes if needed. So, any of your advice will be greatly appreciated.

I personally think this plan is somewhat ambitious, but I am determined to do my best.

Thanks

Ling

-----

Lingjuan (Ling) Wang Li

Visiting Scientist

Sector Policies and Programs Division

Office of Air Quality Planning and Standards

Environmental Protection Agency

109 TW Alexander Dr. BldgE.

RTP, NC 27711

Phone: 919-541-1339

Associate Professor

Department of Biological and Agricultural Engineering

North Carolina State University

3110 faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)

Phone: 919-515-6762

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]; Schrock, Bill[Schrock.Bill@epa.gov];  
greg.johnson@por.usda.gov[greg.johnson@por.usda.gov];  
greg.zwicke@ftc.usda.gov[greg.zwicke@ftc.usda.gov]  
**Cc:** lwang5@ncsu.edu[lwang5@ncsu.edu]  
**From:** WangLi, Lingjuan  
**Sent:** Wed 8/26/2015 8:16:52 PM  
**Subject:** "Reference Guide to AFO Air Emission BMPs"\_Working Plan  
AFO Air Emission BMPs\_Working Plan.docx

**Robin and Bill:**

Attached please find my tentative working plan I mentioned at the staff meeting earlier this afternoon. Please advise if I miss anything important, or if I should take a different approach to addressing the issue. I am flexible to make any changes since I am just at the beginning.

**Greg & Greg:**

Howdy! Today is my 3<sup>rd</sup> day with Robin's group. I enjoy the time here and have been trying to get myself adjusted to the new system. I am getting there ☺.

I have carefully read the reference guide you all developed for the cropping system. It provides me some ideas to plan the one for AFOs. Attached file list my current thinking of ways to do this. The plan is tentative, and subject to changes if needed. So, any of your advice will be greatly appreciated.

I personally think this plan is somewhat ambitious, but I am determined to do my best.

Thanks

Ling

-----

Lingjuan (Ling) Wang Li

Visiting Scientist

Sector Policies and Programs Division

Office of Air Quality Planning and Standards

Environmental Protection Agency

109 TW Alexander Dr. BldgE.

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3110 faucette Dr. Campus Box 7625

Raleigh, NC27695

Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)

Phone: 919-515-6762

**To:** Giles-AA, Cynthia[Giles-AA.Cynthia@epa.gov]; Shinkman, Susan[Shinkman.Susan@epa.gov]; Kelley, Rosemarie[Kelley.Rosemarie@epa.gov]; Brooks, Phillip[Brooks.Phillip@epa.gov]  
**Cc:** Chapman, Apple[Chapman.Apple@epa.gov]; Fried, Gregory[Fried.Gregory@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Thur 3/24/2016 4:40:24 PM  
**Subject:** FW: NAEMS Meeting Briefing Paper  
NAEMS workplan 3 24 16.docx

All:

## Ex. 5 - Deliberative Process

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

Help eliminate environmental violations - report tips and complaints at:  
<http://www.epa.gov/compliance/complaints/index.html>



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**From:** Sullivan, Tim

**Sent:** Wednesday, March 23, 2016 6:16 PM

**To:** Giles-AA, Cynthia <Giles-AA.Cynthia@epa.gov>; Shinkman, Susan <Shinkman.Susan@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Brooks, Phillip <Brooks.Phillip@epa.gov>

**Cc:** Huffman, Linda <Huffman.Linda@epa.gov>; Chapman, Apple <Chapman.Apple@epa.gov>; Fried, Gregory <Fried.Gregory@epa.gov>

**Subject:** NAEMS Meeting Briefing Paper

All:

The briefing paper for Thursday's meeting with OAR, ORD, and OECA on the National Air Emissions Monitoring Study (NAEMS) of animal feeding operations is attached. The attached paper was sent to the OAR front office late this afternoon.

## Ex. 5 - Deliberative Process

Please contact me should you have any questions.

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

Help eliminate environmental violations - report tips and complaints at:  
<http://www.epa.gov/compliance/complaints/index.html>

NOTICE: This message may contain deliberative, attorney-client, attorney work product, or otherwise privileged material. Do not release this message under FOIA without appropriate review. If you are not the intended recipient, please advise the sender immediately by reply e-mail and delete this message and any attachments from your machine and all storage media whether in electronic or hard copy. Thank you.

---

[1] Use of an IPA to augment the activities of the student contractors and FTE for specific AFO sectors will be pursued.

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 3/21/2016 3:34:25 PM  
**Subject:** Updated 1-pager  
NAEMS mtg w ORD and OECA - 03 21 2016.docx

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 3/3/2016 8:18:31 PM  
**Subject:** FW: PRESS: Deadline 4pm Today

Just saw this-calling Rebecca now. She is out thru the 29<sup>th</sup>.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Noonan, Jenny  
**Sent:** Thursday, March 03, 2016 3:10 PM  
**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>  
**Cc:** Mills, Kathy <Mills.Kathy@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>  
**Subject:** RE: PRESS: Deadline 4pm Today

Sounds relevant.

**From:** Dunkins, Robin  
**Sent:** Thursday, March 03, 2016 3:09 PM  
**To:** Noonan, Jenny <Noonan.Jenny@epa.gov>  
**Cc:** Mills, Kathy <Mills.Kathy@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>  
**Subject:** Re: PRESS: Deadline 4pm Today

Should we add anything on the Rocky Mountain National Park initiative? Region 8 has the lead on it but we participate in the meetings and it is a huge collaborative effort looking at nitrogen deposition

Robin Dunkins, Leader

Natural Resources Group

OAR/OAQPS/SPPD

RTP, NC 27711

Office: 919-541-5335

Cell: 919-605-1178

[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

On Mar 3, 2016, at 11:10 AM, Noonan, Jenny <[Noonan.Jenny@epa.gov](mailto:Noonan.Jenny@epa.gov)> wrote:

Robin –

Would you take a look at the timeline below (a combination of information from Harnett, Randy Waite and OW) and see if you are ok with sending it to this reporter from Ensia. Ensia is a magazine showcasing environmental solutions in action. Their mission is to share stories and spark conversations that motivate and empower people to create a more sustainable future.

The deadline is 4pm today.

Thanks,

Jenny

**From:** Davis, Alison

**Sent:** Wednesday, March 02, 2016 7:25 PM

**To:** Noonan, Jenny <[Noonan.Jenny@epa.gov](mailto:Noonan.Jenny@epa.gov)>

**Subject:** One more open item --- FW: OAR ACTION: DDL 3/3 Ensia: Wasted food & nitrogen

Jenn - This one has been around for a bit. I actually don't think we have much to add here.

Enesta is referring to an NPR inquiry from the fall – but that was specific to poultry. It's in the tracker if you need it. Bill also sent me some info re. SAB status a couple

of weeks ago – but he or Robin should check this before it goes anywhere. See highlighted below – after the OW answers.

I've added the SAB info, but I'm not sure I'd push it. Martha K. ran it by Randy w for me and said they thought Robin's group was the way to go.

--AD

Reporter: Lizzy Grossman

Outlet: Enslia

Inquiry:

Lizzy is writing about excess nitrogen emissions and efforts to measure and reduce them, particularly by reducing emissions throughout the food system. The story is inspired by a session at this year's AAAS meeting (see:

<https://aaas.confex.com/aaas/2016/webprogram/Session11666.html>)

She's seen our web resources (<http://www.epa.gov/nutrient-policy-data>) but would very much like to speak with a staff expert about what the agency is doing to address this issue.

Specifically, she wants to learn:

- how EPA is prioritizing efforts to reduce these emissions
- where the biggest bang for the buck (so to speak) may be found
- what progress is being made to date in various regions
- what progress is being made by addressing different sources, with various strategies

This is from OW. OW noted that they thought this was focused on crop ag, not animal ag.

You can find information about what EPA is doing to combat nutrient pollution problems in the US by visiting

<http://www.epa.gov/nutrient-policy-data/what-epa-doing>

Also, EPA has taken significant steps to address issues with nutrient pollution associated with animal agriculture:

**2003:** EPA issued the first federal regulations requiring nutrient management plans (NMPs) for permitted CAFOs. See <https://www.gpo.gov/fdsys/pkg/FR-2003-02-12/pdf/03-3074.pdf>. In addition to discussing the regulatory requirements as they were originally designed, the preamble also provides background discussion, including a brief synopsis of the history leading to the development of the rule.

**2008:** In response to a court decision, EPA revised the requirements for nutrient management planning to include public notification and procedures for the incorporation of the terms of the NMP into a permit. Here is a link to the 2008 rule: <https://www.gpo.gov/fdsys/pkg/FR-2008-11-20/pdf/E8-26620.pdf>.

**2012:** As part of its effort to assist states, the regulated community, and the public about these regulatory requirements, EPA updated the CAFO Permit Writers Manual: <http://www.epa.gov/npdes/npdes-permit-writers-manual-concentrated-animal-feeding-operations>. In this guidance document, you will find a more detailed discussion concerning the contents of an NMP and the ways the terms of the NMP may be incorporated into a permit.

**2015:** In November, EPA launched the Nutrient Recycling Challenge in partnership with the U.S. Department of Agriculture, pork and dairy producers, and environmental and scientific experts. The challenge is a competition to develop affordable technologies that recycle nutrients from animal waste into products that farmers can use or sell. During the four-phase competition, innovators will turn their concepts into designs and eventually into working technologies piloted on farms. The submission period for first phase of the challenge closed on Jan. 15 with EPA receiving 75 submissions. Final awards will be announced in January 2017, with farm demonstration projects to follow. EPA believes that innovation and technology can lead to useful and profitable products that are a win-win for farmers and local waterways. See <https://www.challenge.gov/challenge/nutrient-recycling-challenge/>.

**2015:** EPA collaborated with the National Cattlemen's Beef Association, U.S. Poultry & Egg

Association, United Egg Producers, National Pork Producers Council, and the National Milk Producers Federation to produce "Beneficial Uses of Manure and Environmental Protection." The brochure highlights the different types of usable, sellable products that can be derived from manure's nutrients. See <http://www.beefusa.org/CMDocs/BeefUSA/Media/Beneficial%20Uses%20of%20Manure%20FINAL%20Aug2015.pdf>.

**2016:** EPA supported the U.S. Poultry & Egg Association in producing a series of educational videos on environmental management. The videos, released in January, discuss Clean Water Act requirements for concentrated animal feeding operations, the importance of environmental management, and nutrient management planning and implementation. They also include perspectives from producers. <http://www.youtube.com/user/USPOULTRY>

Jenny – this is what we have from Bill. You can gauge whether to include it in the info to provide. I have reformatted to fit the OW approach

2007-2010 -- Through the National Air Emissions Monitoring Study, EPA completed two years of data collection from farms in multiple animal sectors across the U.S.

2011 -- After developing draft methodologies to characterize and estimate emissions from AFOs, EPA asked the EPA Science Advisory Board (SAB) to review these approaches.

2013 -- The SAB issued a final report, with several recommendations. SAB:

- \* Noted the need for additional data to fill specific gaps in knowledge.
- \* Encouraged the EPA to develop a more complex modeling tool to estimate emissions that would reflect greater variability in animal production systems.
- \* Suggested applying improved versions of the draft methodologies in the interim.

EPA plans to continue this work and will use the findings, in conjunction with related recommendations from the 2003 National Research Council, to account for air emissions from AFOs.



---

**From:** Jones, Enesta  
**Sent:** Wednesday, March 2, 2016 4:54 PM  
**To:** Daguillard, Robert; Davis, Alison; Drinkard, Andrea  
**Cc:** Schollhamer, Mary; Loop, Travis; Jones, Enesta  
**Subject:** OAR ACTION: DDL 3/3 Ensia: Wasted food & nitrogen

We should be able to add info on the study and SAB. What we provided to NPR awhile back. Alison, you need me to dig it up?

**Enesta Jones**

U.S. EPA, Office of Media Relations

**Desk:** 202.564.7873

**Cell:** 202.236.2426

On Mar 2, 2016, at 4:48 PM, Daguillard, Robert <[Daguillard.Robert@epa.gov](mailto:Daguillard.Robert@epa.gov)> wrote:

Hullo again E,

Anything for OAR to add to the response below? DDL tomorrow.

Thanks, R.

Mary G Schollhamer

Acting Deputy Director of Communications

Office of Water

U.S. Environmental Protection Agency

Office: 202-564-5759

Mobile: 202-853-5317

[schollhamer.mary@epa.gov](mailto:schollhamer.mary@epa.gov)

**To:** Costa, Allison[Costa.Allison@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Tue 2/23/2016 9:38:53 PM  
**Subject:** RE: Question from CAA website

Excellent response!

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Costa, Allison  
**Sent:** Tuesday, February 23, 2016 4:35 PM  
**To:** Dunn, Julia <dunn.julia@epa.gov>  
**Cc:** Dunkins, Robin <Dunkins.Robin@epa.gov>; Spence, Kelley <Spence.Kelley@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>; Noonan, Jenny <Noonan.Jenny@epa.gov>  
**Subject:** FW: Question from CAA website

Hi Julia,

Bill forwarded me the question below. I'm not sure exactly which report the person was reading that sparked the question, but generally a variety of equipment is required to measure farm emissions. Not all of the equipment is portable and some of it can be quite complex. So, while it is possible to measure the emissions from a farm and EPA and others have measured farm emissions at specific sites (see the National Air Emissions Monitoring Study), it isn't necessarily practical for a "neighbor" to monitor emissions.

Odor issues are usually handled at the state or county government level. Many have set specific odor thresholds and regularly investigate nuisance complaints.

Let me know if we can be of any more help!

Cheers,

Allison

---

Allison Costa

U.S. EPA | Natural Resources Group | Sector Policies and Programs Division, OAQPS

109 T.W. Alexander Drive (Mail Drop E143-03) | Research Triangle Park, NC 27711

Phone: 919.541.1322 | email: [Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)

**From:** Dunn, Julia

**Sent:** Tuesday, February 23, 2016 1:48 PM

**To:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>; Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>

**Cc:** Noonan, Jenny <[Noonan.Jenny@epa.gov](mailto:Noonan.Jenny@epa.gov)>

**Subject:** Question from CAA website

Good afternoon,

I'm an intern in the PACS office and I've been helping to answer questions that come from the public through the CAA website. For one such question, I've been directed to you because you may be able to help me answer it. Any help that you can offer (including referring me to someone else!) would be greatly appreciated.

The question is this: "I was looking at the EPA's Emissions from Animal Feeding Operations. Is there a way for the EPA or a neighbor to measure the emissions? Will the EPA investigate if the stench is overwhelming? Thanks."

My thought is that this will have something to do with CAFO regulations. I don't know where the individual lives.

Thanks!

-Julia

**To:** Eck, Janet[Eck.Janet@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Tue 2/23/2016 8:04:44 PM  
**Subject:** RE: OAQPS Petition Inventory.  
OAQPS Petition Inventory 2 4 15 wcs.docx

Janet - Update to grain elevator on page 27. Thanks

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Eck, Janet  
**Sent:** Tuesday, February 23, 2016 12:39 PM  
**To:** Schrock, Bill <Schrock.Bill@epa.gov>  
**Subject:** FW: OAQPS Petition Inventory.

Thanks Bill.

**From:** Eck, Janet  
**Sent:** Thursday, February 18, 2016 9:50 AM  
**To:** Boswell, Colin <Boswell.Colin@epa.gov>; Barnett, Keith <Barnett.Keith@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>; French, Chuck <French.Chuck@epa.gov>; Fruh, Steve <Fruh.Steve@epa.gov>; Lamason, Bill <Lamason.Bill@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>; Schell, Bob <Schell.Bob@epa.gov>  
**Cc:** Conner, Lisa <Conner.Lisa@epa.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>; McLamb, Marguerite <McLamb.Marguerite@epa.gov>; Pemberton, Wanda <Pemberton.Wanda@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Steiner, Elyse <Steiner.Elyse@epa.gov>; Thompson, Fred <Thompson.Fred@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>  
**Subject:** FW: OAQPS Petition Inventory.

Please send me any updates you might have to the petition inventory by COB Thursday, 2/25.

Since we just went through a similar petition exercise yesterday, I can take that info provided for some of the projects and incorporate, as appropriate. Sorry for the duplication of effort and thanks for your help.

**From:** Iglesias, Amber

**Sent:** Thursday, February 18, 2016 8:58 AM

**To:** Chappell, Regina <[Chappell.Regina@epa.gov](mailto:Chappell.Regina@epa.gov)>; Eck, Janet <[Eck.Janet@epa.gov](mailto:Eck.Janet@epa.gov)>; Brown, Kelly <[Brown.Kelly@epa.gov](mailto:Brown.Kelly@epa.gov)>; Long, Pam <[Long.Pam@epa.gov](mailto:Long.Pam@epa.gov)>

**Cc:** Henigin, Mary <[Henigin.Mary@epa.gov](mailto:Henigin.Mary@epa.gov)>; Rush, Alan <[Rush.Alan@epa.gov](mailto:Rush.Alan@epa.gov)>

**Subject:** OAQPS Petition Inventory.

Reg Team,

Please have any updates to this list back to me by COB 2/26. Thanks!

Amber Iglesias

EPA Office of Air Quality Planning and Standards

1200 Pennsylvania Ave., NW

Washington, D.C. 20460

202-564-3175

**To:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 2/22/2016 6:24:09 PM  
**Subject:** NAEMS

How's this sound?

The Agency is continuing the development of statistically-based emissions estimating methodologies considering relevant comments and recommendations from the Science Advisory Board (SAB). These methodologies will utilize data collected as part of the National Air Emissions Monitoring Study and any other relevant data sets as recommended by the SAB.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)



**To:** Costa, Allison[Costa.Allison@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Wed 2/17/2016 2:15:23 PM  
**Subject:** FW: Draft USDA material  
[USDA Meeting Agenda Feb18.docx](#)  
[ATT00001.htm](#)  
[USDA Meeting Agenda Feb18 annotated.docx](#)  
[ATT00002.htm](#)

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Dunkins, Robin  
**Sent:** Wednesday, February 17, 2016 9:10 AM  
**To:** Schrock, Bill <Schrock.Bill@epa.gov>; Spence, Kelley <Spence.Kelley@epa.gov>; Swanson, Nicholas <Swanson.Nicholas@epa.gov>  
**Subject:** Fwd: Draft USDA material

Any comments?

Robin Dunkins, Leader

Natural Resources Group

OAR/OAQPS/SPPD

RTP, NC 27711

Office: 919-541-5335

Cell: 919-605-1178

[dunkins.robins@epa.gov](mailto:dunkins.robins@epa.gov)

Begin forwarded message:

**From:** "Koerber, Mike" <Koerber.Mike@epa.gov>  
**Date:** February 16, 2016 at 6:00:26 PM EST  
**To:** "Dunkins, Robin" <Dunkins.Robin@epa.gov>  
**Subject:** FW: Draft USDA material

Robin -- Let me know if you have any thoughts. Thanks.

Mike

**From:** Stewart, Lori  
**Sent:** Tuesday, February 16, 2016 5:18 PM  
**To:** Dunham, Sarah <Dunham.Sarah@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; Flynn, Mike <Flynn.Mike@epa.gov>; Cherepy, Andrea <Cherepy.Andrea@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>; Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>  
**Cc:** DeMocker, Jim <DeMocker.Jim@epa.gov>; Saltman, Tamara <Saltman.Tamara@epa.gov>; Kurlansky, Ellen <Kurlansky.Ellen@epa.gov>; Cyran, Carissa <Cyran.Carissa@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Jordan, Deborah <Jordan.Deborah@epa.gov>  
**Subject:** Draft USDA material

Thank you for the input on the USDA agenda. I am attaching a first draft of the agenda, along with an annotated version that includes the descriptions you sent in on each topic (for EPA only, I believe). The topics may be culled down between now and Thursday. We'll share this with Janet tonight. I included RFS under climate, but will see what Janet's preference is on that. Thanks.

**From:** Stewart, Lori  
**Sent:** Wednesday, February 10, 2016 1:04 PM  
**To:** Dunham, Sarah <Dunham.Sarah@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; Flynn, Mike <Flynn.Mike@epa.gov>; Cherepy, Andrea <Cherepy.Andrea@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>; Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>  
**Cc:** DeMocker, Jim <DeMocker.Jim@epa.gov>; Saltman, Tamara <Saltman.Tamara@epa.gov>; Kurlansky, Ellen <Kurlansky.Ellen@epa.gov>; Cyran, Carissa <Cyran.Carissa@epa.gov>

**Subject:** USDA Agenda Topics - Friday, COB please

As follow-up to our senior staff meeting discussion, please send me a list of both climate and non-climate topics for the coordination meeting with USDA (scheduled on 2/18). Would appreciate getting this by **COB Friday, 2/12** so I can run them by Janet and see if any additional background information is needed. Thanks everyone.

**To:** Costa, Allison[Costa.Allison@epa.gov]; Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 1/25/2016 7:06:00 PM  
**Subject:** FW: When A Chicken Farm Moves Next Door, Odor May Not Be The Only Problem

fyi

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Davis, Alison  
**Sent:** Monday, January 25, 2016 1:11 PM  
**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>  
**Subject:** FW: When A Chicken Farm Moves Next Door, Odor May Not Be The Only Problem

FYI – link to the story below

**From:** Jones, Enesta  
**Sent:** Monday, January 25, 2016 7:40 AM  
**To:** Davis, Alison <Davis.Alison@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>  
**Cc:** Bremer, Kristen <Bremer.Kristen@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Daguiard, Robert <Daguiard.Robert@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Jones, Enesta <Jones.Enesta@epa.gov>; Hull, George <Hull.George@epa.gov>; Schollhamer, Mary <Schollhamer.Mary@epa.gov>  
**Subject:** NPR: When A Chicken Farm Moves Next Door, Odor May Not Be The Only Problem

## Ex. 5 - Deliberative Process

# Ex. 5 - Deliberative Process

**To listen to the entire story:**

<http://www.npr.org/sections/thesalt/2016/01/24/463976110/when-a-chicken-farm-moves-next-door-odor-may-not-be-the-only-problem>

**Enesta Jones**

U.S. EPA, Office of Media Relations

**Desk:** 202.564.7873

**Cell:** 202.236.2426

On Jan 15, 2016, at 3:53 PM, Davis, Alison <Davis.Alison@epa.gov> wrote:

Thanks. WFDD is in Winston-Salem. I'll give our folks a heads up.

**From:** Jones, Enesta

**Sent:** Friday, January 15, 2016 2:33 PM

**To:** Loop, Travis <Loop.Travis@epa.gov>

**Cc:** Bremer, Kristen <Bremer.Kristen@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Daguiard, Robert <Daguiard.Robert@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Jones, Enesta <Jones.Enesta@epa.gov>

**Subject:** RE: Regs for Poultry Industry

FYI -- The reporter just called me to say the story will finally run this weekend or Monday. It got delayed because she was working on other stuff. This is WFDD, the NPR affiliate in NC. Allison Wiedeman of OW was interviewed.

**From:** Loop, Travis  
**Sent:** Monday, November 09, 2015 8:15 AM  
**To:** Jones, Enesta <[Jones.Enesta@epa.gov](mailto:Jones.Enesta@epa.gov)>  
**Cc:** Bremer, Kristen <[Bremer.Kristen@epa.gov](mailto:Bremer.Kristen@epa.gov)>; Drinkard, Andrea <[Drinkard.Andrea@epa.gov](mailto:Drinkard.Andrea@epa.gov)>; Daguiard, Robert <[Daguiard.Robert@epa.gov](mailto:Daguiard.Robert@epa.gov)>; Lee, Monica <[Lee.Monica@epa.gov](mailto:Lee.Monica@epa.gov)>  
**Subject:** Re: Regs for Poultry Industry

Our expert George Utting can do this at 3.

Travis Loop

Communications Director for Water

U.S. Environmental Protection Agency

Phone: 202.870.6922

Follow us on Twitter @EPAwater

On Nov 9, 2015, at 8:08 AM, Jones, Enesta <[Jones.Enesta@epa.gov](mailto:Jones.Enesta@epa.gov)> wrote:

Travis, Andrea and Kristen,

How are we moving forward on this today? Interview or written responses? If the former, who is/are the suggested interviewee/s?

**Enesta Jones**

U.S. EPA, Office of Media Relations

**Desk:** 202.564.7873

**Cell:** 202.236.2426

On Nov 6, 2015, at 2:39 PM, Loop, Travis <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)> wrote:

Understand. We will accommodate.

Travis Loop

Director of Communications

Office of Water

U.S. Environmental Protection Agency

202-870-6922

[loop.travis@epa.gov](mailto:loop.travis@epa.gov)

**From:** Jones, Enesta

**Sent:** Friday, November 06, 2015 2:39 PM

**To:** Loop, Travis <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)>; Bremer, Kristen  
<[Bremer.Kristen@epa.gov](mailto:Bremer.Kristen@epa.gov)>; Drinkard, Andrea <[Drinkard.Andrea@epa.gov](mailto:Drinkard.Andrea@epa.gov)>

**Cc:** Daguiard, Robert <[Daguiard.Robert@epa.gov](mailto:Daguiard.Robert@epa.gov)>; Lee, Monica  
<[Lee.Monica@epa.gov](mailto:Lee.Monica@epa.gov)>

**Subject:** RE: Regs for Poultry Industry

I agree. She's just very determined to get taped soundbites.

**From:** Loop, Travis

**Sent:** Friday, November 06, 2015 2:38 PM

**To:** Jones, Enesta; Bremer, Kristen; Drinkard, Andrea

**Cc:** Daguiard, Robert; Lee, Monica

**Subject:** RE: Regs for Poultry Industry

I've asked our CAFO program who would be the best person to give this verbal overview of regulations for poultry industry as they pertain to water. But the info we sent in links covers it all...

Travis Loop

Director of Communications  
Office of Water

U.S. Environmental Protection Agency

202-870-6922

[loop.travis@epa.gov](mailto:loop.travis@epa.gov)

**From:** Jones, Enesta  
**Sent:** Friday, November 06, 2015 11:12 AM  
**To:** Loop, Travis <Loop.Travis@epa.gov>; Bremer, Kristen  
<Bremer.Kristen@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>  
**Cc:** Daguiard, Robert <Daguiard.Robert@epa.gov>; Lee, Monica  
<Lee.Monica@epa.gov>  
**Subject:** Re: Regs for Poultry Industry

All: Here are her questions; she prefers an interview on Monday.

-What are the federal regulations for the poultry industry?----  
What are the federal regulations for air emissions for the poultry industry?

-What are the federal regulations for water quality/waste management for the poultry industry?

-Are there any different regulations for dry litter vs. wet waste management?

-Are there any disclosure requirements for the industry to disclose toxic pollutants in air or water?

-Some environmental groups recently filed suit against the EPA over chicken farm emissions. Can the agency respond to that?

-Is the EPA looking into any changes with the current regulations?



**Enesta Jones**

U.S. EPA, Office of Media Relations

**Desk:** 202.564.7873

**Cell:** 202.236.2426

On Nov 5, 2015, at 4:21 PM, Loop, Travis <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)> wrote:

Given the nature of the request and the turnaround time, here are a couple of links that address regulation of the poultry industry:

Agriculture: Laws and Regulations that Apply to Your Agricultural Operation by Farm Activity: <http://www2.epa.gov/agriculture/agriculture-laws-and-regulations-apply-your-agricultural-operation-farm-activity#LivestockPoultryAquaculture>

Animal Feeding Operation Final

Rules: <http://water.epa.gov/polwaste/npdes/afo/Animal-Feeding-Operations-Final-Rules.cfm>

With more specificity and a little more time, we'd be glad to answer additional questions.

Travis Loop

Communications Director for Water

U.S. Environmental Protection Agency

Phone: 202.870.6922

Follow us on Twitter @EPAwater

Begin forwarded message:

**From:** "Siedschlag, Gregory" <[Siedschlag.Gregory@epa.gov](mailto:Siedschlag.Gregory@epa.gov)>

**Date:** November 5, 2015 at 4:16:37 PM EST

**To:** "Loop, Travis" <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)>  
**Cc:** "Gilbertson, Sue" <[gilbertson.sue@epa.gov](mailto:gilbertson.sue@epa.gov)>  
**Subject:** RE: Regs for Poultry Industry

Travis,

Given the nature of the request and the turnaround time, here are a couple of links that address regulation of the poultry industry:

Agriculture: Laws and Regulations that Apply to Your Agricultural Operation by Farm Activity: <http://www2.epa.gov/agriculture/agriculture-laws-and-regulations-apply-your-agricultural-operation-farm-activity#LivestockPoultryAquaculture>

Animal Feeding Operation Final Rules:  
<http://water.epa.gov/polwaste/npdes/afo/Animal-Feeding-Operations-Final-Rules.cfm>

With more specificity and a little more time, we'd be glad to answer additional questions.

Thanks,

**Greg Siedschlag**

Communication Coordinator

U.S. Environmental Protection Agency  
Office of Wastewater Management

Office: (202) 564-0650

Cell: (202) 603-2987

**From:** Loop, Travis  
**Sent:** Thursday, November 05, 2015 3:40 PM  
**To:** Siedschlag, Gregory <[Siedschlag.Gregory@epa.gov](mailto:Siedschlag.Gregory@epa.gov)>

**Subject:** FW: Regs for Poultry Industry

Greg

This reporter is looking for an overview of the regulations on the poultry industry and any new developments/changes. Then she may have specific follow up questions. Can OWM send the overview in the next two hours? Seems like probably online?

Travis Loop

Director of Communications  
Office of Water

U.S. Environmental Protection Agency

202-870-6922

[loop.travis@epa.gov](mailto:loop.travis@epa.gov)

**From:** Jones, Enesta

**Sent:** Thursday, November 05, 2015 3:38 PM

**To:** Loop, Travis <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)>

**Cc:** Drinkard, Andrea <[Drinkard.Andrea@epa.gov](mailto:Drinkard.Andrea@epa.gov)>; Daguillard, Robert <[Daguillard.Robert@epa.gov](mailto:Daguillard.Robert@epa.gov)>; Lee, Monica <[Lee.Monica@epa.gov](mailto:Lee.Monica@epa.gov)>

**Subject:** Re: Regs for Poultry Industry

Just spoke to her. She's amenable to that. She has already spoken to the state for the piece and wants to hear what's happening at the fed level.

**Enesta Jones**

U.S. EPA, Office of Media Relations

**Desk:** 202.564.7873

**Cell:** 202.236.2426

On Nov 5, 2015, at 3:34 PM, Loop, Travis <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)> wrote:

That's a broad question. We can provide some written info to start and then would be happy to consider speaking on a few more specific questions. Does that work?

Travis Loop  
Director of Communications  
Office of Water  
U.S. Environmental Protection Agency  
202-870-6922  
[loop.travis@epa.gov](mailto:loop.travis@epa.gov)

-----Original Message-----

From: Jones, Enesta  
Sent: Thursday, November 05, 2015 3:33 PM  
To: Drinkard, Andrea <[Drinkard.Andrea@epa.gov](mailto:Drinkard.Andrea@epa.gov)>; Loop, Travis <[Loop.Travis@epa.gov](mailto:Loop.Travis@epa.gov)>; Daguillard, Robert <[Daguillard.Robert@epa.gov](mailto:Daguillard.Robert@epa.gov)>  
Cc: Jones, Enesta <[Jones.Enesta@epa.gov](mailto:Jones.Enesta@epa.gov)>  
Subject: NPR: Regs for Poultry Industry

Hi All: A reporter with the NPR affiliate in NC (WFDD) is looking for a taped interview by tomorrow or Monday. Her interest is prompted the growth of poultry in that area. She'd like to hear from us on:

What are the current regs for the poultry industry? Air and water. Is there any consideration for change?

Is this something OAR and/or OW can address?

**To:** Spence, Kelley[spence.kelley@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 1/25/2016 6:22:27 PM  
**Subject:** FW: OAQPS Petition Inventory  
OAQPS Petition Inventory 1\_13\_15.docx

Here is the latest petition list for review

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Eck, Janet  
**Sent:** Monday, January 25, 2016 1:08 PM  
**To:** Schrock, Bill <Schrock.Bill@epa.gov>  
**Subject:** FW: OAQPS Petition Inventory

Thanks.

**From:** Iglesias, Amber  
**Sent:** Wednesday, January 13, 2016 2:27 PM  
**To:** Eck, Janet <Eck.Janet@epa.gov>; Long, Pam <Long.Pam@epa.gov>; Brown, Kelly <Brown.Kelly@epa.gov>; Chappell, Regina <Chappell.Regina@epa.gov>  
**Cc:** Rush, Alan <Rush.Alan@epa.gov>; Henigin, Mary <Henigin.Mary@epa.gov>  
**Subject:** OAQPS Petition Inventory

Reg Team,

Attached is the petition inventory. Please update any petitions for your division and have back to me by 1/25/16. Thanks!

Amber Iglesias

EPA Office of Air Quality Planning and Standards

1200 Pennsylvania Ave., NW

Washington, D.C. 20460

202-564-3175

**To:** McKinney, Doug[Mckinney.Douglas@epa.gov]; Vette, Alan[Vette.Alan@epa.gov]; Hassett-Sipple, Beth[Hassett-Sipple.Beth@epa.gov]; Nunez, Carlos[Nunez.Carlos@epa.gov]; Spence, Kelley[spence.kelley@epa.gov]; Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Tue 1/12/2016 8:51:50 PM  
**Subject:** First Cut at a 2-pager for Next Weeks NAEMS Meeting  
NAEMS mtg w ORD and OECA - 01 12 2015 V2.docx

Attached is a first draft of a 2-pager for next weeks meeting. Please let me know if you have any comments. Thanks

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**Cc:** Vasu, Amy[Vasu.Amy@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 1/11/2016 9:24:08 PM  
**Subject:** FW: Due COB today, if possible -- review/revision of pagers for Jan. 26th Administrator Hearing with House Ag Committee List of Topics and One-pagers  
Animal Feeding Operations 011115.docx

Here is the revised version for forwarding to Amy.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Dunkins, Robin  
**Sent:** Monday, January 11, 2016 3:53 PM  
**To:** Schrock, Bill <Schrock.Bill@epa.gov>  
**Subject:** RE: Due COB today, if possible -- review/revision of pagers for Jan. 26th Administrator Hearing with House Ag Committee List of Topics and One-pagers

My only comment is on the petition/lawsuit section. It needs some rewording. The lawsuits were dismissed but I don't think that dismisses our responsibility to respond to the petitions we are just doing it on our timeframe. So we should modify to reflect current lawsuits or keep petitions and lawsuits in and indicate which are under litigation.

Robin Dunkins, Group Leader

Natural Resources Group

OAR/OAQPS/SPPD Mail Code: E143-03

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711



919-541-5335

[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

**From:** Schrock, Bill

**Sent:** Monday, January 11, 2016 3:36 PM

**To:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>

**Subject:** FW: Due COB today, if possible -- review/revision of pagers for Jan. 26th Administrator Hearing with House Ag Committee List of Topics and One-pagers

**Importance:** High

Attached are my edits on the 1-pager. One addition on ORD coordination and 2 deletions on the petitions that have concluded. The only other edit is the header needs changed with new date.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Vasu, Amy

**Sent:** Monday, January 11, 2016 12:09 PM

**To:** Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>; Ward, Hillary <[Ward.Hillary@epa.gov](mailto:Ward.Hillary@epa.gov)>; Boswell, Colin <[Boswell.Colin@epa.gov](mailto:Boswell.Colin@epa.gov)>; Jones, Toni <[Jones.Toni@epa.gov](mailto:Jones.Toni@epa.gov)>; Ndoh, Tina <[Ndoh.Tina@epa.gov](mailto:Ndoh.Tina@epa.gov)>; Macpherson, Alex <[Macpherson.Alex@epa.gov](mailto:Macpherson.Alex@epa.gov)>; Keaveny, Brian <[Keaveny.Brian@epa.gov](mailto:Keaveny.Brian@epa.gov)>

**Cc:** Thompson, Fred <[Thompson.Fred@epa.gov](mailto:Thompson.Fred@epa.gov)>; Terry, Sara <[Terry.Sara@epa.gov](mailto:Terry.Sara@epa.gov)>; Ashley, Jackie <[Ashley.Jackie@epa.gov](mailto:Ashley.Jackie@epa.gov)>; Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>

**Subject:** Due COB today, if possible -- review/revision of pagers for Jan. 26th Administrator Hearing with House Ag Committee List of Topics and One-pagers

**Importance:** High

All,

Sara Terry has asked for review of the attached pagers by COB today. Please see if your name is listed below and, if possible, take a look at the pager and provide any updates to Sara Terry and Jackie Ashley and copy me.

**CAFO - SPPD**

- Animal Feeding Operations (Bill Schrock)

**Existing Source Carbon Standards -- SPPD**

- CPP Internal Nifty Numbers (Colin Boswell?)
- CEIP Public Factsheet (Tina Ndoh)
- Employment Analysis Background (HEID -- Alex M / Brian K?)
- CPP Federal Plan Top Qs (Toni Jones)
- Federal Plan Implementation Hearing Prep (Toni Jones?)

**Methane - SPPD**

- Landfills NSPS (Hillary Ward)
- Landfills EG (Hillary Ward)

Sorry for the short notice and thank you.

Amy

---

**From:** Terry, Sara  
**Sent:** Wednesday, December 23, 2015 3:59 PM  
**To:** Vasu, Amy  
**Cc:** Thompson, Fred; Ndoh, Tina; Swanson, Nicholas; Ashley, Jackie; Tarr, Jeremy  
**Subject:** FW: Jan. 26th Administrator Hearing with House Ag Committee List of Topics and One-pagers

In preparation for a January 26<sup>th</sup> hearing that the Administrator has with the House Ag Committee, OAQPS needs to review and update several pagers as well as develop a couple new ones. See below for SPPD's assignments. I'm attaching existing pagers for those that are available. For existing pagers, these just require a review and update only if needed. For items in red, please develop a new pager in the same format.

The hearing is the 26<sup>th</sup>, so I'd like to get the first set of materials up to OAR by the 12<sup>th</sup>, so please return any updates and new pagers by January 11<sup>th</sup>. I'm including the full list in case you see something else that should be assigned to you from another OAQPS division, or OAR office. Please reply to both Jackie and I.

Thanks,  
Sara

#### **CAFO - SPPD**

- Animal Feeding Operations

#### **Existing Source Carbon Standards – SPPD**

- CPP Internal Nifty Numbers
- CEIP Public Factsheet
- Employment Analysis Background
- CPP Federal Plan Top Qs
- Federal Plan Implementation Hearing Prep
- NEW- Rural Coops

**Methane - SPPD**

- Landfills NSPS
- Landfills EG

**OTHER OAQPS DIVISION ASSIGNMENTS - FYI****Ozone - HEID**

- External Ozone by the numbers
- Addressing Background Ozone with Q and A

**Regional Haze – AQPD**

Summary of Status of RH Program (cover Navajo generating station)

NEW- Taconite

**Wood Heaters - OID**

- Wood Heaters – 3-31-15

**OTHER OAR OFFICE ASSIGNMENTS - FYI****Biomass - OAP**

- Biogenic CO2 Background
- Biogenic CO2 QAs

**Existing Source Carbon Standards - Ellen Kurlansky**

- Reliability Public Factsheet
- Reliability Q&A

#### **CARBIO - OTAQ**

- CARBIO 1-pgr for Jan 2015 hearing
- CARBIO Roll Out Document

#### **Climate Science - OAP**

- Revised Climate Science

#### **Heavy Duty (Consolidate) - OTAQ**

- HD Phase 2 one-pager
- Draft HD P2 Internal QAs
- Script for HD GHG Ph2
- Top Q and As

#### **Methane**

- Internal Nifty Numbers
- SC Methan QAs and Desk Statement – OAP

#### **New Source Carbon Standards – OAQPS unless otherwise noted**

- EGU GHG EGU Rationale
- Fact Sheet 111b
- CCS Cost
- QA New 111b draft
- Geologic Sequestration – OAP
- CCS and EPOA of 2005 and Clean Coal Power Initiative

- EGU GHG NSPS RIA Benefit Cost Summary
- 111b GHG NSPS Summary

#### **RFS - OTAQ**

RFS 3-year rule, key messages

Reset Rule Q&A

#### **Tier III - OTAQ**

OTAQ Tier III

#### **VW - OTAQ**

- VW Hearing Key Messages
- VW Top QA
- QA for VW HEC Hearing

**To:** Costa, Allison[Costa.Allison@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 12/17/2015 4:17:14 PM  
**Subject:** blurb

Here's a blurb from a recent control that included some NAEMS stuff. This might be useful or some part of it.

The EPA also has other efforts underway, including work to better understand and characterize air emissions from AFOs. Over the past several years, the EPA has been working closely with a range of stakeholders on the National Air Emissions Monitoring Study. This study has yielded an array of data collected from farms across the United States, including multiple animal sectors. In addition, we have engaged the EPA Science Advisory Board (SAB) in a review of the methodologies the EPA uses to characterize and estimate emissions from AFOs. The EPA will use this information, in conjunction with the recommendations from the 2003 National Research Council, to account for air emissions from AFOs. We will proceed, with careful consideration of the SAB analysis and recommendations, to work toward meaningful and cost-effective pollution reductions in the AFO sector.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**To:** Costa, Allison[Costa.Allison@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Thur 12/17/2015 2:29:34 PM  
**Subject:** CAFO CMS  
[CMS\\_09-001-4523\\_Response.doc](#)  
[HSUS Petition Update\\_103113.pdf](#)

These are probably the two closest responses we have to helping on this one.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)



**To:** Damberg, Rich[Damberg.Rich@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Wed 12/16/2015 8:17:37 PM  
**Subject:** CAFO BMPs  
AFOs Air Emission BMPs Draft 12.1.2015.docx

Rich - Below is a version of the BMP document from early December. We do not include costs in this version and I'm not sure we plan to include them in future versions. I guess we can discuss that if you think it's important to include. Let us know what you think about the overall approach though. Thanks

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

---

**From:** WangLi, Lingjuan  
**Sent:** Tuesday, December 01, 2015 4:05 PM  
**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>  
**Cc:** Zwicke, Greg - NRCS, Fort Collins, CO <greg.zwicke@ftc.usda.gov>;  
greg.johnson@por.usda.gov; lwang5@ncsu.edu; StClair, Aimee <StClair.Aimee@epa.gov>;  
Schrock, Bill <Schrock.Bill@epa.gov>; Costa, Allison <Costa.Allison@epa.gov>  
**Subject:** RE: 1 on 1 with Robin to catch up on Projects

Hello, Robin:

I am sending you the update of the "reference guide" write-up. We may discuss this in depth when we meet with Greg on Friday. In this draft, I have not addressed Greg's review comments on section 4 in this draft, but I plan to do so after we finish drafting all the sections.

By the way, Greg's group at USDA will host a workshop/training on "National Air Quality Site Assessment Tool (NAQST)" at NC State tomorrow and the day after tomorrow. I believe that this workshop will be very helpful for our reference guide project and I plan to attend. Therefore, I will not come to EPA campus in the next two days. I will be back on Friday, December 4.

Thank you for your understanding. See you on Friday.

Ling

---

Lingjuan (Ling) Wang Li, Ph.D.  
Visiting Scientist  
Natural Resources Group (NRG)  
Sector Policies and Programs Division (SPPD)

Office of Air Quality Planning and Standards (OAQPS)  
Environmental Protection Agency (EPA)  
109 TW Alexander Dr. BldgE.  
RTP, NC 27711  
Email: [WangLi.Lingjuan@epa.gov](mailto:WangLi.Lingjuan@epa.gov)  
Phone: [919-541-1339](tel:919-541-1339)

Associate Professor  
Department of Biological and Agricultural Engineering  
North Carolina State University  
3110 Faucette Dr. Campus Box 7625  
Raleigh, NC27695  
Email: [Lwang5@ncsu.edu](mailto:Lwang5@ncsu.edu)  
Phone: [919-515-6762](tel:919-515-6762)  
<http://www.bae.ncsu.edu/topic/airquality/>  
<http://www.bae.ncsu.edu/people/faculty/lwang5/>

-----Original Appointment-----

**From:** StClair, Aimee **On Behalf Of** Dunkins, Robin  
**Sent:** Tuesday, November 24, 2015 1:19 PM  
**To:** WangLi, Lingjuan  
**Subject:** 1 on 1 with Robin to catch up on Projects  
**When:** Friday, December 04, 2015 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** Robin's Office

**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Mon 12/7/2015 5:33:46 PM  
**Subject:** FW: NAEMS Study: Materials in prep for tomorrow's pre-meeting with Janet  
[NAEMS mtg w ORD and OECA 9\\_16\\_14.docx](#)  
[NAEMS TPs 9\\_16\\_14.doc](#)

I don't have any ppt on the NAEMS but did find these TPs and background material for a Janet briefing. I'm not sure this is what you were looking for though.

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Hackel, Angela  
**Sent:** Monday, September 15, 2014 4:40 PM  
**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>; Frantz, Chris <Frantz.Chris@epa.gov>; Spence, Kelley <Spence.Kelley@epa.gov>; Elmore, Larry <Elmore.Larry@epa.gov>  
**Subject:** FW: NAEMS Study: Materials in prep for tomorrow's pre-meeting with Janet

FYI

Angela

**From:** South, Peter  
**Sent:** Monday, September 15, 2014 4:25 PM  
**To:** Alfaro, Carlos; Alston, Lala; Dougherty, Joseph-J; Edwards, Crystal; Henigin, Mary; Koerber, Mike; OAR Briefings; Rush, Alan; Sanders, Maria; South, Peter; Walker, Jean  
**Cc:** Dunkins, Robin; Tsirigotis, Peter; Culligan, Kevin; Eck, Janet; Fruh, Steve; Hackel, Angela; Johnson, Tanya; McLaughlin, Kevin; Tammaro, Joanne; Thompson, Fred; Vasu, Amy  
**Subject:** NAEMS Study: Materials in prep for tomorrow's pre-meeting with Janet

I have attached the TPs and backgrounder in prep for tomorrow's pre-meeting with Janet on NAEMS.

Please call me or Mike Koerber with any questions relating to this information.

Thank you.

Pete South

OAR/OAQPS/IO

U.S. EPA

office: 919 541-5359

Ex. 6 - Personal Privacy

Prebrief for NAEMS Study Meeting on 9/17 Meeting

FILE PRINT IMPORT EXPORT DELETE HELP

Accept Decline Cancel Appointment scheduling Assistant Meeting Notes Accept Tentative Decline Propose Respond Reminder None

Accepted by Alston, Lala on 9/10/2014 1:22 PM.  
Next to another appointment on your calendar.

Organizer McCabe, Janet

Subject Prebrief for NAEMS Study Meeting on 9/17

Location WJC-N 5400 + 1-866-299-3188; Participant Code: Ex. 6 - Personal Privacy

Start time Tue 9/16/2014 2:00 PM All day event

Tue 9/16/2014 2:00 PM

To: McCabe, Janet; Page, Steve; Tsingotis, Peter; Dunkins, Robin; Harnett, Bill; Koerber, Mike; Powers, Tom

RE: NAEMS Study  
Discussion

ED\_000919\_00001212



**To:** Davis, Alison[Davis.Alison@epa.gov]  
**From:** Schrock, Bill  
**Sent:** Tue 11/10/2015 6:53:40 PM  
**Subject:** FW: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry  
NPR Poultry Response 111015 + bld comments + KMS.docx

Bill Schrock  
U.S. EPA  
RTP, NC 27709  
(919) 541-5032  
(919) 541-3470 (fax)

**From:** Smith, Kristi  
**Sent:** Tuesday, November 10, 2015 9:59 AM  
**To:** Doster, Brian <Doster.Brian@epa.gov>; Jordan, Scott <Jordan.Scott@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>; Costa, Allison <Costa.Allison@epa.gov>  
**Cc:** Bianco, Karen <Bianco.Karen@epa.gov>  
**Subject:** RE: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

The attached adds edits on tops of Brian's and incorporates Karen's change. I've made quite a few other changes in discussing the SIPs – we generally speak to them with regard to NAAQS nonattainment, not NAAQS “violations.”

Kristi M. Smith \* Assistant General Counsel for the NAAQS Implementation Group \* Air & Radiation Law Office \* US EPA, Office of General Counsel \* [smith.kristi@epa.gov](mailto:smith.kristi@epa.gov) \* (202) 564-3068 \*

CONFIDENTIAL communication for internal deliberations only; may contain deliberative, attorney-client, attorney work product, or otherwise privileged material; do not distribute outside EPA or DOJ.

**From:** Doster, Brian  
**Sent:** Tuesday, November 10, 2015 9:45 AM  
**To:** Jordan, Scott <Jordan.Scott@epa.gov>; Schrock, Bill <Schrock.Bill@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>; Costa, Allison <Costa.Allison@epa.gov>  
**Cc:** Bianco, Karen <Bianco.Karen@epa.gov>; Smith, Kristi <Smith.Kristi@epa.gov>

**Subject:** RE: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

## Ex. 5 - Attorney Client

**From:** Jordan, Scott

**Sent:** Tuesday, November 10, 2015 8:45 AM

**To:** Schrock, Bill <Schrock.Bill@epa.gov>; Dunkins, Robin <Dunkins.Robin@epa.gov>; Costa, Allison <Costa.Allison@epa.gov>

**Cc:** Bianco, Karen <Bianco.Karen@epa.gov>; Smith, Kristi <Smith.Kristi@epa.gov>; Doster, Brian <Doster.Brian@epa.gov>

**Subject:** Fw: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

Bill - The attached Q&As look fine to me from the perspective of the CAFO NSPS cases that I have, with one suggestion:

Ex. 5 - Attorney Client

## Ex. 5 - Attorney Client

Also, I am looping in Karen Bianco as ARLO's CAFO person and Kristi and Brian because of the first Q&A that gets into permitting and NAAQS.

Kristi, Brian and Karen - I don't have any issues to flag for you and this looks pretty innocuous to me, but I want to make sure that you have a chance to look at this to make sure there is not some permitting or NAAQS nuance that I am missing.

Scott Jordan

Air and Radiation Law Office

Office of General Counsel

202-564-7508

---

**From:** Schrock, Bill  
**Sent:** Tuesday, November 10, 2015 7:43 AM  
**To:** Jordan, Scott  
**Cc:** Dunkins, Robin; Costa, Allison  
**Subject:** FW: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

Scott – Can you give this short response a quick review? Thanks and let me know if you have any questions.

Bill Schrock  
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(919) 541-5032  
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**From:** Dunkins, Robin  
**Sent:** Monday, November 09, 2015 5:21 PM  
**To:** Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>  
**Cc:** Costa, Allison <[Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)>  
**Subject:** RE: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

Provided one comment on last question. Other than that I'm good with response.

Robin Dunkins, Group Leader



Natural Resources Group

OAR/OAQPS/SPPD Mail Code: E143-03

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

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[dunkins.robins@epa.gov](mailto:dunkins.robins@epa.gov)

**From:** Schrock, Bill

**Sent:** Monday, November 09, 2015 4:49 PM

**To:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>

**Cc:** Costa, Allison <[Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)>

**Subject:** FW: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

Here is our first swing at this. Most of the responses are from previous responses to various inquires.

Bill Schrock  
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**From:** Costa, Allison

**Sent:** Monday, November 09, 2015 4:46 PM

**To:** Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>

**Subject:** RE: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry

I changed a word or two. The second sentence isn't very clear to a layperson, but I'm not sure what kind of background the reporter has, so I didn't try to rewrite it with a summary of the CAA.

- Allison

**From:** Schrock, Bill  
**Sent:** Monday, November 09, 2015 4:08 PM  
**To:** Costa, Allison <[Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)>  
**Subject:** FW: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry  
**Importance:** High

Allison – Here is a quick response.

Bill Schrock  
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(919) 541-3470 (fax)

**From:** Davis, Alison  
**Sent:** Monday, November 09, 2015 2:24 PM  
**To:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>  
**Cc:** Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>; Costa, Allison <[Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)>; Vasu, Amy <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>; Hackel, Angela <[Hackel.Angela@epa.gov](mailto:Hackel.Angela@epa.gov)>  
**Subject:** FW: ACTION - PRESS -- : DEADLINE NOON TUESDAY --- NPR and Poultry  
**Importance:** High

Please see below. Let me know if noon isn't doable for a draft answer. I'll run traps with OGC after I see the draft.

Thank!!

**From:** Jones, Enesta  
**Sent:** Monday, November 09, 2015 11:56 AM  
**To:** Drinkard, Andrea <[Drinkard.Andrea@epa.gov](mailto:Drinkard.Andrea@epa.gov)>; Bremer, Kristen <[Bremer.Kristen@epa.gov](mailto:Bremer.Kristen@epa.gov)>  
**Cc:** Jones, Enesta <[Jones.Enesta@epa.gov](mailto:Jones.Enesta@epa.gov)>  
**Subject:** ACTION: NPR and Poultry

Hi Enesta,

Below are my questions for air emissions. They're about the same as the set that I sent you before. Please let me know if you have any more questions. Also, I'm willing to wait a little longer if someone can address these in an interview. I think I will know more after the 4 p.m. interview. Since this is also part of my story, I may need someone who can speak to this as well.

Thank you!

Keri

- What are the federal regulations for air emissions for the poultry industry?
- Are there any different regulations for dry litter poultry operations?
- Are there any disclosure requirements for the industry to disclose toxic pollutants in air or water?
- Some environmental groups recently filed suit against the EPA over chicken farm emissions. Can the agency respond to that?
- Is the EPA looking into any changes with the current regulations?



## CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms

### Final Rule

**Please note:**

This regulation does not create any new regulatory requirements or reporting deadlines.

The final rule, "CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms," is an *exemption* from the existing notification requirements in the 1984 final rule on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) notification requirements. The exemption became effective on January 20, 2009. The final rule *exempts* all farms that release hazardous substances from animal waste to the air that meet or exceed their reportable quantity (RQ) from reporting under CERCLA section 103. The final rule also *exempts* farms that release hazardous substances from animal waste to the air that meet or exceed their RQ from reporting under the Emergency Planning and Community Right to Know Act (EPCRA) section 304 if they stable or confine fewer than the following number of animal species:

1. 700 mature dairy cows, whether milked or dry
2. 1,000 veal calves
3. 1,000 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs
4. 2,500 swine each weighing 55 pounds or more
5. 10,000 swine each weighing less than 55 pounds
6. 500 horses
7. 10,000 sheep or lambs
8. 55,000 turkeys
9. 30,000 laying hens or broilers, if the farm uses a liquid manure handling system
10. 125,000 chickens (other than laying hens), if the farm uses other than liquid manure handling system
11. 82,000 laying hens, if the farm uses other than a liquid manure handling system
12. 30,000 ducks (if the farm uses other than a liquid manure handling system)
13. 5,000 ducks (if the farm uses a liquid manure handling system)

**For purposes of this rule:**

**Animal Waste** means manure (feces, urine, and other excrement produced by livestock), digestive emissions, and urea. The definition includes animal waste when mixed or commingled with bedding, compost, feed, soil and other typical materials found with animal waste.

**Farm** means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year.

Note: For the purposes of this rule, EPA considers animals that reside primarily outside of an enclosed structure (i.e., a barn or a feed lot) and graze on pastures, not to be stabled or confined.

Those farms that stable or confine greater than the number of animal species identified above are still required to submit the appropriate reports to State and local officials pursuant to EPCRA section 304 if they release hazardous substances to the air that meet or exceed their RQ. That is, the reporting requirement under EPCRA section 304 in this rule does not create a new regulatory requirement.

Farms that *are required* to report their air releases of hazardous substances from animal waste under EPCRA should follow the requirements at 40 CFR 355.32, "Which emergency release notification requirements apply to continuous releases?" For these notifications you are *not* required to call the National Response Center. Your initial telephone notification should be directed to the community emergency coordinator for the Local Emergency Planning Committee (LEPC) for any area likely to be affected by the release and to the State Emergency Response Commission (SERC) of any State likely to be affected by the release. You will then submit the written notification to those LEPCs and SERCs as appropriate.

Finally, the exemption created by the rule does not impact EPA's authority to respond to citizen complaints or requests for assistance from State or local government agencies to investigate and respond to those releases of hazardous substances from farms. Nor does this rule limit any of the Agency's other authorities under CERCLA (e.g., liability) or EPCRA.

### Background

CERCLA section 103 notification requirements call for immediate notification to the National Response Center (NRC) when the person in charge of a facility has knowledge of a release of a hazardous substance equal to or greater than the RQ established by EPA for that substance.

EPCRA section 304 emergency notification requirements call for notification to be given to the community emergency coordinator for each LEPC for any area likely to be affected by the release, and the SERC of any State likely to be affected by the release. Through this notification, State and local officials can assess whether a response action to the release is appropriate. EPCRA section 304 notification requirements apply only to releases that have the potential for off-site exposure and that are from facilities that produce, use, or store a "hazardous chemical," as defined by regulations promulgated under the Occupational Safety and Health Act of 1970 (OSHA) (29 CFR 1910.1200(c)) and by section 311 of EPCRA.

### You Are Not Required to Report If:

- You have reported continuous releases in the past and your continuous release report is up to date and on file with the appropriate SERC and LEPC; or
- Your releases are less than the RQ.

Moreover, EPA does not expect farms participating in the Agency's Animal Feeding Operation Air Compliance Agreement (70 *Fed. Reg.* 4958), and that are in compliance with the terms of the Agreement, to report at this time.

For continuous release reporting, to establish the continuity and stability of the release, you may use:

- Prior release data;
- Knowledge of operating procedures; or
- Best professional judgment.

### Look for Updates

As the Agency receives additional questions that are generally applicable to a wide audience, we will update this fact sheet on the web with those questions and answers.

EPA is working on developing emission estimating methodologies based in part on the data collected in the National Air Emissions Monitoring Study, which is scheduled for completion at the end of 2009 with the final report to be complete in 2011. For more information on the Air Compliance Agreement and the Air Emissions Monitoring Study, please visit:  
<http://www.epa.gov/compliance/resources/agreements/caa/cafo-agr.html>.

**Talking Points (Aug 21, 2014 call with ORD and OECA)**

We need ORD's help on emissions methods for agricultural sources.

To review the bidding...

- In 2002, EPA and USDA asked the NAS for advice on emissions methods (and data) for animal feeding operations. They addressed the need for more data, the utility of interim methods, and the desirability of more sophisticated approaches as a longer term research effort.
- In 2005, OECA developed the Air Compliance Agreement which called for the National Air Emissions Monitoring Study (NAEMS). About 13,000 farms signed on to the Agreement and the industry provided funding for NAEMS.
- NAEMS consisted of measurements at 25 sites in 9 states over a 2-year period. The industry and EPA worked cooperatively on the study with a goal of coming up with a viable emissions method.
- Following the study, EPA, including ORD, developed draft statistically-based emission methods for a few animal types (broiler houses, and swine and dairy open sources).
- In April 2012, we sent these draft methods to SAB. In April 2013, we received SABs recommendations. In a nutshell, SAB acknowledged that our statistically-based method may work as an interim approach, but they suggested technical improvements and questioned whether the method could be used beyond those farms included in the NAEMS study. Furthermore, they strongly recommended the more sophisticated approach (i.e., a process-based model) previously endorsed by the NAS.

## **Ex. 5 - Deliberative Process**

So, my ask today is that OAR and ORD work together, with ORD in a leadership role, on fulfilling EPA's obligation under the 2005 Agreement to develop emission methods for agricultural sources.

## **Ex. 5 - Deliberative Process**

## **Background Paper: Janet McCabe meeting with ORD and OECA (Sept. 17, 2014) Animal Feeding Operations: Emission Estimating Methodology Development**

### **How the agency got here:**

- In the late 1990s, the agency developed model farms for animal feeding operations (AFOs) using emission factors developed from limited data. USDA and the AFO industry voiced concerns about the science basis for the model AFOs and emission factors.
- In 2002, EPA and USDA commissioned the National Academy of Science (NAS) to evaluate the current knowledge base and approaches for estimating emissions from AFOs. NAS provided their recommendations in a 2003 report.
- The report acknowledged the limited amount of air emission data from AFOs and recommended that additional studies be conducted. NAS also recommended development of a process-based model as a longer-term research need, but acknowledged the likely need for an interim emissions estimation approach and provided corresponding short-term research recommendations.
- NAS's recommendations coupled with input from several AFO sectors prompted OECA to develop the **2005 Air Compliance Agreement (Agreement) which called for the National Air Emissions Monitoring Study (NAEMS).**

### **About the consent agreement:**

- Voluntary administrative agreement; announced in January 2005. Goals: reduce air pollution; ensure compliance with the Clean Air Act, CERCLA and EPCRA; monitor AFO emissions; and promote national consensus on methodologies for estimating AFO emissions.
- About 2,500 participants (representing 13,000 farms) signed the agreements. The Environmental Appeals Board approved the final agreements in December 2006.
- The agency committed to use the NAEMS data and "other relevant data" to develop emission estimating methodologies (EEMs) for the animal sectors that participated in the study (broilers, egg-layers, swine and dairy). The turkey industry did sign up but did not get enough farms signed up to fund the study so they were not included. The cattle industry decided they would not participate.
- All participants agreed to use final EEMs to determine their environmental regulatory obligations (CAA, CERCLA and EPCRA) until the agency finalizes a process-based model.

### **About NAEMS:**

- The AFO industry funded the NAEMS that monitored air emissions at 25 sites in nine states for 2 years. Monitored sites were selected by the study's Science Advisor, approved by EPA and were considered to be representative of the particular AFO industry.
- The NAEMS monitoring plan was developed by consensus by a group of scientist and engineers from USDA, EPA, academia and agricultural stakeholders.
- This study measured emissions from both houses (barns) and open sources (lagoons and basins).
  - Barns – Particulate matter (TSP, PM<sub>10</sub>, PM<sub>2.5</sub>), ammonia, hydrogen sulfide and volatile



- organic compounds (VOCs) were measured.
- Open sources – ammonia, hydrogen sulfide and VOCs were measured.
- The NAEMS data and final reports were submitted to the agency in fall 2010.
- In January 2011, the agency issued a call for information seeking additional studies on emissions and animal and waste management at AFOs. This is an ongoing effort.
- Using a statistical approach (not a “process-based” approach) to develop EEMs, a team comprised of representatives from OAR and ORD, along with contractor support, published draft EEMs for broiler houses and swine and dairy open sources in early 2012.
  - Since receiving the NAEMS database in 2010, OAR has spent \$1.5 million analyzing the data and developing the draft EEMs for broiler barns and swine and dairy open sources.
- In response to numerous requests by industry, state and local agencies, and environmental groups to participate in the EEM development and review process, the agency requested the SAB to review the draft broiler house and swine and dairy open source EEMs.
- SAB began its review in April 2012 and submitted its final report in April 2013.

**SAB’s advice:**

- SAB made the three following overarching recommendations and about 40 additional recommendations:
  - (1) Strongly recommends that EPA develop a process-based modeling approach to predict air emissions from broiler confinement facilities and swine and dairy lagoons and basins,
  - (2) EPA should not apply current versions of its models for estimating emissions beyond those farms covered in the existing data set, and
  - (3) Acknowledges EPA may need to apply statistical approaches to assess emissions in the interim while it is developing and evaluating process-based models.

**Activities following receipt of SAB recommendations:**

- Agency reviewed SAB’s recommendations and believes it can address all of the recommendations except for using a “process-based” approach to develop the EEMs.
  - In 2010, ORD awarded a STAR grant to Carnegie Mellon University to improve and update an existing process-based model for ammonia emissions from the livestock and fertilizer sector. The results of this research are not yet available but we expect a draft inventory in early 2015. Additional research may be needed before a process-based model is ready for regulatory use.
- OAR is currently addressing two of SAB’s recommendations that focused on data:
  - SAB recommended that the agency use as much data as possible when developing the EEMs.
    - OAR has obtained the databases for nine additional studies of AFO emissions.
    - Both the NAEMS and other relevant studies databases will be use in the EEM development process.
  - SAB recommended that the NAEMS data be reanalyzed at different “data completeness criteria” levels (a 75% level was approved in the study’s QAPP and used in quality assuring the initial NAEMS data submitted to EPA).
    - OAR is working with the NAEMS Science Advisor to evaluate the NAEMS data at different “data completeness criteria” levels.

**Additional discussion topics:**

- Since this project was initiated in 2005, several other monitoring studies (mostly funded by USDA) of uncontrolled emissions from AFOs have been completed at similar farms. Some of

## **Ex. 5 - Deliberative Process**

## **Ex. 5 - Deliberative Process**

- Staff is aware that USDA and some animal sectors have conducted limited research on methods for reducing AFO emissions. Control techniques tested vary depending on the pollutant of interest. For example, both management practices and control techniques have been tested for reducing ammonia (management practice – reduce nitrogen content in feed; control technique – exhaust fans discharging to a biofilter or scrubber type device).

## **Ex. 5 - Deliberative Process**

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## **Agricultural Air Quality Conservation Measures**

### **Reference Guide for Poultry and Livestock Production Systems**

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## Section 1:

### Nutrition and Feed Management

Animal feeding operations (AFOs) emit various gas pollutants, particulate matter (PM), and odors. Animal diet ingredient forms and levels affect animals' digestibility, nutrient retention capability, and the characteristics of nutrient excreted. Any change of diet formulation may lead to changes of animal manure chemical composition that eventually results in changes of air emissions. Traditionally, animals are fed with amount of nutrients beyond the animal needs with have a "safety margin" to guarantee animal growth. This practice results in excessive nutrient excretion causing gaseous and odor emissions.



Nutrition and feed management manipulate and control the quantity and quality of available nutrients, feedstuffs, or additives fed to animals. Nutrition and feed management improve feeding efficiency, reduce the quantity of nitrogen (N), phosphorus (P), sulfur (S), salts and other nutrients excretion in manure to reduce odor, PM, gas pollutants, and greenhouse gas (GHGs) emissions from AFOS. Practices shown to be effective include dietary manipulation, feed additives, group and phase feeding, minimizing feed wastage. Combination of these practices has shown significant reduction in  $\text{NH}_3$ ,  $\text{H}_2\text{S}$ , and odor emissions. One or more of the nutrition and feed management practices should be used to mitigate

#### Conservation Measures:

- Dietary manipulation and formulation
- Feed additives
- Group and phase feeding
- Feed management

#### ➤ Conservation Measure: Dietary Manipulation

##### Description

Dietary manipulation provides essential available nutrients to meet the animal requirements while minimizing excess amounts. It reduces amount of dietary protein and/or minimizes overfeeding of sulfur in the ration to match, rather than exceed, the animal needs.

In animal diet, crude protein (CP) provides amino acids needed for growth, reproduction and milk or egg production. Lowering CP content can reduce N excretion and thus  $\text{NH}_3$  emission,

however, reduction of CP can cause deficiency in amino acids that significantly affect animal performance. Supplemental synthetic amino acids need to be added in dietary manipulation practice to lower CP. Selection of specific amino acids should be species-specific, according to animal genetics, age, sex, and other factors. Commonly used amino acids are lysine, methionine, and threonine, which usually can be added to feed without additional costs.

High-quality, protein-limited diets with appropriate supplementation of amino acids can effectively reduce N excretion and NH<sub>3</sub> emissions from swine, poultry, and dairy and beef cattle operations without compromising animal productivity. Every 1% reduction in CP with appropriate amino acids supplementation in poultry and swine diets results in approximately a 10% decrease in N excretion.

For non-ruminants (i.e., swine and poultry), reduction of CP should be fulfilled with supplementing with amino acids. In swine production, soybean is a typical CP source. Replacing soybean with amino acids (synthetic lysine, threonine, methionine, and tryptophan) and corn can reduce odors 40-86%. Pigs fed lower CP diets with added amino acids can perform as well as those fed conventional corn-soybean diets with no added amino acids. The CP can be reduced by 3.5-4.5% without compromising pig performance if the supplemental amino acids are added. This can lower total N excreted by 30-40%, NH<sub>3</sub> emissions by 40-60%, H<sub>2</sub>S emissions by 30-40%, and odors by 30-40%. In poultry production, methionine and lysine, are two commonly used synthetic amino acid supplements to lower CP in poultry diets. Research has shown that using supplemental lysine, methionine, threonine, isoleucine, valine, tryptophan, and arginine in six-phase feeding broiler diet has resulted in greater reduction of NH<sub>3</sub> emissions compared to a four-phase diet supplemented with methionine and lysine.

For ruminants (i.e., beef cattle and dairy cows), protein concentrations should be formulated to meet metabolizable protein (degradable and undegradable proteins) needs for growth and/or milk production. Approach of manipulating the CP and energy content (carbohydrate and fat) in the diet should be taken to enhance the availability of amino acids. Beef cattle need less protein toward the end of the feeding period. Reducing CP in cattle diets at this point can reduce NH<sub>3</sub> emissions significantly. It was reported that reducing the CP in beef cattle diets from 13-11.5% in the last 56 days of the feeding period reduced NH<sub>3</sub> emissions by 19%. Research has also shown that feeding dairy cattle more than 16.5% CP does not increase milk yield, fat-corrected yield, or milk protein yield. This suggests that keeping CP level no more than 16.5% in dairy diet would not have a negative impact on productivity.

#### Effectiveness

| Classification               | PM  | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|------------------------------|-----|-----------------|------------------|------|------|
| Established & USDA approved* | --- | 30-50%          | 30-50%           | ---  | ---  |

\*USDA NRCS conservation practice standard 592: PM<sub>10</sub>/PM<sub>2.5</sub> (low); NH<sub>3</sub> (high); VOCs (low); CH<sub>4</sub> (high); N<sub>2</sub>O (low) CO<sub>2</sub> (none); NO<sub>x</sub> (low)

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## Additional Considerations

Dietary manipulation practice has various options that may be used to mitigate multiple gas emissions, however, supplementing diets with amino acids other than lysine, methionine, or threonine may not be economically feasible.

Undesirable sulfurous compounds often originate from sulfur-containing amino acids and sulfur-containing mineral sources. Additionally, sulfur content of water supplies can impact the generation of undesirable sulfurous compounds. Limiting unnecessary sources of sulfur can reduce emissions of H<sub>2</sub>S and other volatile sulfur compounds.

Byproducts such as dried distillers grains with soluble from ethanol production have variable nutritional content and should be formulated carefully when added to animal diets. Ethanol production removes starch from corn and leaves a byproduct with high concentrations of CP, oil, fiber, and minerals. Dried distillers grains with soluble and other byproducts can alter the nutrient availability of the feed and create nutritional imbalances. Adding wet distillers grains with soluble to cattle diets has shown to increase manure slurry pH, odors, and concentrations of NH<sub>3</sub>, H<sub>2</sub>S, phosphorous, and sulfur.

Nutrient concentrations in feeds vary considerably. Moreover, not all nutrient in feed are equally available to animals. It is very essential to obtain the up to date information about the availability of nutrients in feed ingredients to formulate diets. Therefore, routine laboratory shall be done on the feed ingredients and the formulated diets.

## More information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- eXtension-Air Quality in Animal Agriculture: "Diet and Feed Management to Mitigate Airborne Emissions"
- Purdue University: "Diet and Feed Management Practices affect Air Quality from Poultry and Swine"
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University

## ➤ Conservation Measure: Feed Additives

### Description

Practices of using feed additives are to improve nutrient absorption, thus, improve nutrient utilization efficiency and reduce dietary nutrient content without compromising animal performance.

When minerals are used to meet dietary needs, caution should be taken to minimize some potential negative effects. Inorganic mineral sulfates can increase sulfurous compounds emissions. The mineral sulfate sources (Zn, Fe, Mn, and Cu) in diets may be replaced with carbonate, oxide, and chloride sources to reduce sulfur emission. Moreover, organic mineral

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forms are usually more efficiently absorbed, minimizing the additions needed and amount of minerals excreted.

Use of sub-therapeutic level of feed grade antibiotics can improve feed efficiency and reduce production of some odor compounds. Enzyme additions to animal diets may increase the digestibility of some nutrients, which could reduce manure generation and odors. Growth promotors can also improve feed efficiency that brings potential to reduce air emissions.

In swine production, research has shown that adding small amount of fiber (soybean hulls, sugar beet pulp, and wheat bran) to the diet reduces N excretion and lowers the pH in swine manure. Soybean hulls have the greatest effects on NH<sub>3</sub> reduction. Addition of 10% soybean hulls with 3.4% fat to corn-soybean diets reduced NH<sub>3</sub> by 20%, H<sub>2</sub>S by 32% and odor by 11%. Other additives to reduce urinary pH for NH<sub>3</sub> reduction also include calcium-salts, calcium-benzoate, combination of phosphoric acid and calcium sulfate, combination of monocalcium phosphate, calcium sulfate, and calcium chloride.

In poultry production, the primary strategy for changing pH of excreta in laying hens by replacing a portion of limestone in the diet with calcium sulfate (gypsum; up to one third can be replaced without affecting bird performance, or shell characteristics). Replacement of 35 % of dietary limestone with Ca-sulfate in combination with 1.25% zeolite and slight reductions in dietary CP may result in nearly a 40% reduction in NH<sub>3</sub> emissions, but at the expense of a 3-fold increase in H<sub>2</sub>S emissions.

In all production, adding fat or oil to the diet can reduce PM emissions

#### Effectiveness

| Classification               | PM     | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|------------------------------|--------|-----------------|------------------|------|------|
| Established & USDA approved* | 50-80% |                 |                  |      |      |

\* USDA NRCS conservation practice standard 592: PM<sub>10</sub>/PM<sub>2.5</sub> (low); NH<sub>3</sub> (high); VOCs (low); CH<sub>4</sub> (high); N<sub>2</sub>O (low) CO<sub>2</sub> (none); NO<sub>x</sub> (low)

#### Additional Considerations

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#### More information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- eXtension-Air Quality in Animal Agriculture: "Diet and Feed Management to Mitigate Airborne Emissions"
- Purdue University: "Diet and Feed Management Practices affect Air Quality from Poultry and Swine"
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University



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➤ **Conservation Measure: Group and Phase Feeding**

**Description**

Animals of different sizes and sexes have different nutritional needs. Group and phase feeding practices are to separate animals by age or production state, and/or by sex to provide diets matching the different nutritional needs of each phase and sex, avoiding excessive nutrients in diets.

In swine production, producers frequently separate male and female pigs and feed different diets to better fit the different growth rates and nutrient requirements of the two sexes. Using phase feeding throughout the life cycle can reduce NH<sub>3</sub> emission by 45% and odors by 55%.

In poultry production, phase feeding is also a common practice to reduce nutrient excretion and NH<sub>3</sub> emission. Feeding broilers with four or six phase diets and supplemental anionic acids has shown significant reduction of NH<sub>3</sub> emission.

In cattle production, phase feeding is effective for both dairy and beef cattle.

**Effectiveness**

| Classification               | PM  | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|------------------------------|-----|-----------------|------------------|------|------|
| Established & USDA approved* | --- |                 |                  | ---  | ---  |

\* USDA NRCS conservation practice standard 592: PM<sub>10</sub>/PM<sub>2.5</sub> (low); NH<sub>3</sub> (high); VOCs (low); CH<sub>4</sub> (high); N<sub>2</sub>O (low) CO<sub>2</sub> (none); NO<sub>x</sub> (low)

**Additional Considerations**

While increase numbers of dietary phases are commercially feasible, adding supplements of amino acids other than lysine, methionine, and threonine is economically feasible for the industry.

**More information**

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- eXtension-Air Quality in Animal Agriculture: "Diet and Feed Management to Mitigate Airborne Emissions"
- Purdue University: "Diet and Feed Management Practices affect Air Quality from Poultry and Swine"
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University

➤ **Conservation Measure: Feed Management**

**Description**

Feed management practices include managements of feed processing, storage and delivery.

Feed processing can impact nutrient availability and gas emissions. Fine grain particles have higher surface areas that allow digestive enzymes to break down the feed more easily and increase nutrient utilization. Decreasing feed particle size from 1000 to 600 microns increases dry matter and nitrogen digestibility by 5-12% and lowers the amount of nitrogen in manure by 20-24%. The optimum particle size for swine is between 650 and 750 microns; particle size for poultry is at approximately 400 to 450 microns. Pelleting feeds can reduce feed waste by up to 5% and improve nutrient utilization.

Feed delivery method and frequency can impact feed spillage that ends up in manure. Improperly mixed feed or inconsistent feed deliveries can result in greater waste which will add unnecessary feed expenses, increase the amount of material entering the manure handling system with commensurate increases in emissions from the manure.

Proper feed storage can reduce spoilage. All dry feed should be stored in a dry place (e.g., grain bin, commodity builds). Silage piles and bunkers should be covered to eliminate feed spoilage. All feed unsuitable for refeeding should be removed to minimize emissions caused by feed decomposition.

Lower-dust emissions from feed distribution systems for dry feeds can reduce PM emissions. Adding fat (1%) or water (3:1 water to feed) to dry feed rations can also reduce PM emissions. Using good bunk management practices with cattle can meet their feed intake needs and avoid excessive feed wastage

#### Effectiveness

| Classification               | PM | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|------------------------------|----|-----------------|------------------|------|------|
| Established & USDA approved* |    |                 |                  |      |      |

\* USDA NRCS conservation practice standard 592: PM<sub>10</sub>/PM<sub>2.5</sub> (low); NH<sub>3</sub> (high); VOCs (low); CH<sub>4</sub> (high); N<sub>2</sub>O (low) CO<sub>2</sub> (none); NO<sub>x</sub> (low)

#### Additional Considerations

Fine grinding can increase digestibility but can increase processing costs and dust level that brings increased negative health effects.

#### More information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- eXtension-Air Quality in Animal Agriculture: "Diet and Feed Management to Mitigate Airborne Emissions"
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

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## Section 2:

### Animal Confinement

#### 2.1 Fully Enclosed Confinement

Animal production systems vary with animal species, climate conditions, and topography. The production systems include fully enclosed confinement buildings, partially confined buildings, open sheds and open lots.

Modern poultry and swine production is mostly done in enclosed buildings to protect animals from predators and from the spread of diseases. More importantly, the fully enclosed confinement systems allow better environmental control (e.g., control of temperature, humidity and indoor air pollutants to meet animal growing needs.

The fully enclosed confinement systems are usually equipped with mechanical ventilation systems and /or supplemental heating or cooling. While larger operations enable significant increase of the production efficiency, they result in environmental challenges with larger amounts of air pollutant emissions from production houses and associated waste treatment systems.

Techniques to mitigate air emissions from fully enclosed confinement housing systems include (1) emission controls at exhausts; (2) control of indoor pollutant concentrations; (3) control of emission from sources (e.g., litter amendment).

#### Conservation Measures:

- Biofilters
- Wet scrubbers
- Electrostatic precipitation



Figure 2.1. A fully enclosed production house with mechanical ventilation fans

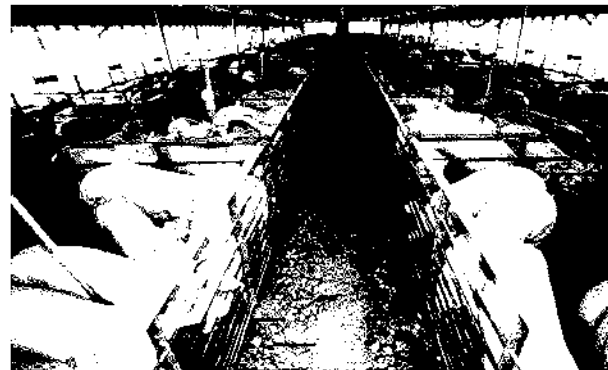


Figure 2.2. Fully enclosed finishing swine housing system

- 
- Spray and oil sprinkling
  - Liquid/solid separation
  - Pit ventilation
  - Little amendments and manure additives
  - UV lights
  - Windbreak walls & shelterbelts

#### ➤ Conservation Measure: Biofilters

##### Description

A biofilter consists of (1) a filter bed with a mixture of organic materials (compost, wood chips) and microbial population, and (2) an air distribution system. While the air distribution system (duct, fans) evenly distribute the pollutant-laden air from building exhaust to biofilter bed (media), microorganisms lived on the biofilter media break down the pollutant gases into carbon dioxide, water, and salts. Biofilters are considered as an effective method to reduce pollutant gas emissions from fully enclosed mechanically ventilated houses. Key factors affecting biofilter performance include (1) the moisture content of biofilter medium, (2) retention time, and (3) static pressure. It is crucial to keep the filter media wet (moisture content >40%) so that the microorganism on the media may stay active in breaking down the gases. The longer the retention time, the better the treatment, but the higher the system static pressure. High static pressure across biofilter system compromises air flow rate that may lead to reduced ventilation flow and heat stress in the production houses.

It is not practical to treat all the exhaust air in summer when a large amount of ventilation flow is required to remove excessive heat from the production house. Often time, biofilters are used to treat pit ventilation air of swine production houses.



Figure 2.3. A flat open bed biofilter (Iowa state website)

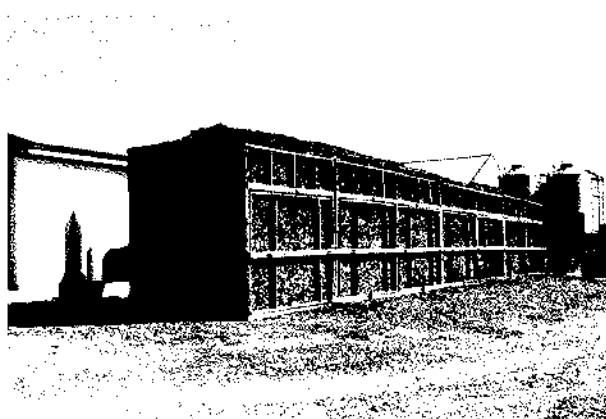


Figure 2.4. A vertical bed biofilter (Iowa State Website)

Main design configurations of biofilters include the flat open bed type and the vertical biofilter. The flat open beds are easier to construct and cost less, however they occupy more space than the vertical biofilters. Vertical biofilters are more difficult to construct and biological material can settle, causing leaks, which will cause the system to be rendered useless. Vertical biofilters can be designed in multiple layers to reduce the effects of settling.

More information about biofilters and their design consideration may be found in the references listed in “more information” section.

#### Effectiveness

| Classification | PM | NH <sub>3</sub> | H <sub>2</sub> S | VOCs  | GHGs |
|----------------|----|-----------------|------------------|-------|------|
| Established    | 80 | 45-75           | 80-95            | 76-93 | ---  |

#### Additional Considerations

Careful design is needed to minimize the impact of biofilter static pressure on production house ventilation system. Monitor and maintenance of the filter media moisture is essential. Sprinklers or other wetting may be needed. Prevention of air leakage and plugging of the media with dust are also needed to ensure effectiveness of the system performance.

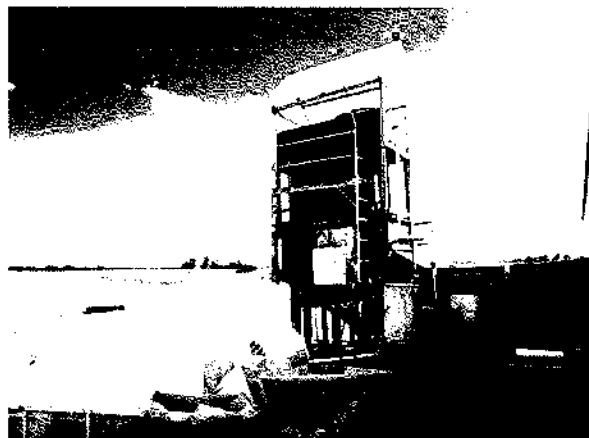
#### More information

- USDA NRCS Conservation Practice Standard 371: Air Filtration and Scrubbing
- University of Minnesota-Manure Management & Air Quality “Biofilter Design Information”
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- eXtension-Air Quality in Animal Agriculture: “Biofilters for Odor and Air pollution Mitigation in Animal Agriculture”
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

#### ➤ Conservation Measure: Wet Scrubbers

##### Description

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### Effectiveness

| Classification | PM | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|----------------|----|-----------------|------------------|------|------|
| Established    |    |                 |                  |      |      |

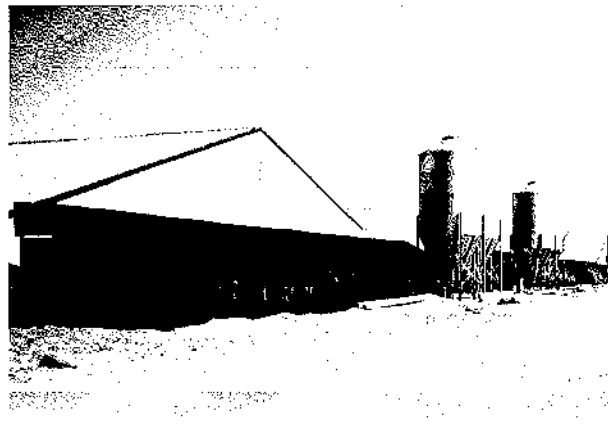
### Additional Considerations

#### More information

- USDA NRCS Conservation Practice Standard 371: Air Filtration and Scrubbing
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- eXtension-Air Quality in Animal Agriculture: “Wet Scrubber for Mechanically Ventilated Animal Facilities”

#### ➤ Conservation Measure: Windbreaks & Shelterbelts

#### Description



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### Effectiveness

| Classification | PM | NH <sub>3</sub> | H <sub>2</sub> S | VOCs  | GHGs |
|----------------|----|-----------------|------------------|-------|------|
| Established    | 80 | 45-75           | 80-95            | 76-93 | ---  |

### Additional Considerations

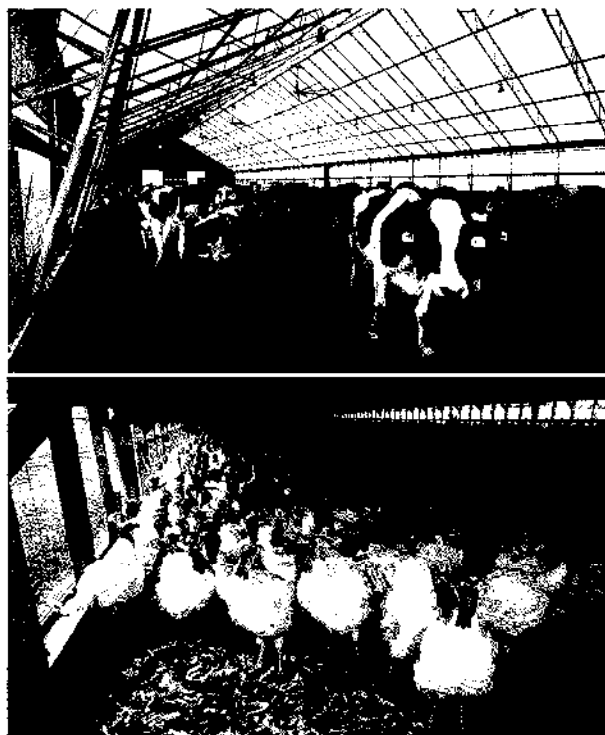
...

### More information

- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- eXtension-Air Quality in Animal Agriculture: “Biofilters for Odor and Air pollution Mitigation in Animal Agriculture”
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

## 2.2 Partially Enclosed Confinement

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Conservation Measures:

- ....
- ....
- ....

➤ Conservation Measure: ....

Description

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Effectiveness

| Classification | PM | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|----------------|----|-----------------|------------------|------|------|
| Established    |    |                 |                  |      |      |

Additional Considerations

• ....

More information

- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

2.3 Open Lots & Corrals Confinement

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**Conservation Measures:**

- ....
- ....
- ....

➤ Conservation Measure: ....

**Description**

.....

**Effectiveness**

| Classification | PM | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|----------------|----|-----------------|------------------|------|------|
| Established    |    |                 |                  |      |      |

**Additional Considerations**

. ....

**More information**

- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

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## Section 4:

### Land Application

#### 4.1 Application Methods

Manure from animal production facilities is usually applied to fertilize crops on land. Solid manure (e.g., manure from poultry facilities, beef cattle feedlots) is usually broadcasted onto cropland surface using different types of spreaders or dump trucks. Liquid and/or slurry manure (e.g., manure from swine, dairy production) is traditionally broadcasted to field surfaces using tank wagons, or irrigation systems (liquid only).



Figure 4.1. Conventional solid manure surface broadcasting

It is well recognized that the conventional manure surface broadcasting of solid and/or liquid manure is an important source of ammonia and odorant gases. Approximately one third of the whole farm ammonia emissions may come from manure land application. Therefore control measures to reduce air emissions during land application should be considered.



Figure 4.2. Conventional liquid manure surface broadcasting

Mitigation of air emissions from land application not only improves ambient air quality, but also retains more nutrients for crops. Several land application methods has been approved to be effective measures for mitigating gaseous emissions.

#### Conservation Measures:

- Injection
- Incorporation
- Banding
- Low pressure application systems

- Subsurface application (e.g., drip irrigation, poultry litter subsurface application)

## ➤ Conservation Measure: Injection

### Description

Injection of liquid and /or slurry manure significantly reduces gaseous emissions (e.g.,  $\text{NH}_3$ ,  $\text{H}_2\text{S}$ ) as compared to the traditional surface broadcasting. Injection may be accomplished by using injectors (e.g., shanks, knives or covering disks) mounted on the application equipment to directly apply manure into the soil at minimum of 4 inches depth.

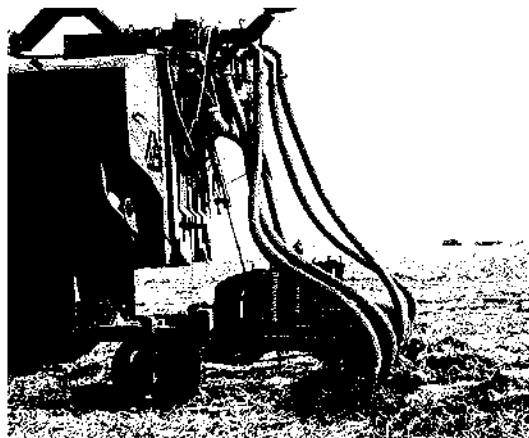


Figure 4.3. Injection of liquid and slurry manure

### Effectiveness

| Classification | PM  | $\text{NH}_3$ | $\text{H}_2\text{S}$ | VOCs | GHGs   |
|----------------|-----|---------------|----------------------|------|--------|
| Established    | --- | 70-90%        | 50-75%               | ---  | -10%** |

\*not enough data to make recommendation

\*\*research works on assessment of injection for GHG reduction have shown inconsistent results due to differences in research methodologies and differences in injection method (e.g., AerWay injection, row injection, slot injection, deep injection, injection with or without incorporation) . In general, there is a slightly increase of  $\text{N}_2\text{O}$  in injection.

### Additional Considerations

Land application should be performed based upon a nutrient management plan following the USDA NRCS Conservation Practice Standard 590-Nutrient Management.

Manure injection should occur after crops have been harvested or before primary tillage. When injecting, caution should be taken when turning on end rows. If possible, manure should also be injected in the end rows. If manure remains on the field surface in the end rows, it should be incorporated as soon as possible. There should be little or no manure visible on the soil surface in the field.

The possible downsides of injection include slightly increase of GHG emissions and the cost. In injection practice, nitrous oxide emissions can be increased due to anaerobic conditions in the soil where manure is injected. This may be an acceptable tradeoff in light of the significant reduction of ammonia emission. After all, manure application is not a significant source of methane emission. As for the cost, injection requires additional equipment (e.g., injectors) and

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more horsepower, it is more costly as compared to surface broadcasting. However, some of that increase in cost may be recaptured through increased nutrient retention for crops.

### More information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

### ➤ Conservation Measure: Incorporation

#### Description

Incorporation is to mix the manure or litter with surface soil at minimum of 4 inches depth such that 80% of applied manure is covered with soil. Incorporation may be accomplished by using standard agricultural practices (e.g., tillage) or other equivalent practices that provide 80% soil coverage.

Broadcasting manure, either solid or liquid, without incorporation, results in the highest gases emissions. An emission reduction in ammonia emission between 20% and 90% can be realized by simply incorporating manure through tillage immediately (within 24 hours), after the manure has been applied. The reduction could be as high as 60-80% for liquid manure if they are accomplished within 6-12 hours of the initial application.

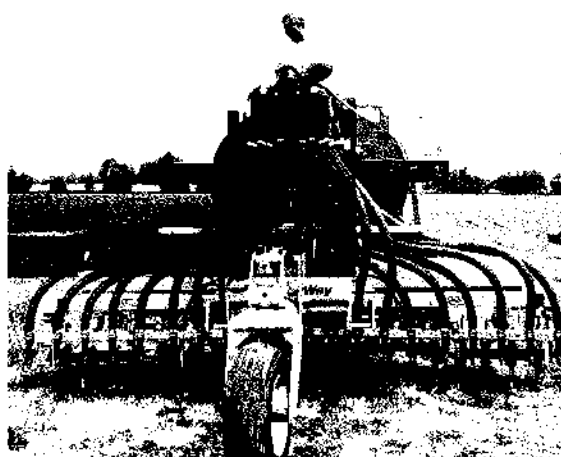


Figure 4.4. AerWay SSD injector unit – also a shallow incorporation tool

#### Effectiveness

| Classification | PM  | NH <sub>3</sub> | H <sub>2</sub> S | VOCs | GHGs |
|----------------|-----|-----------------|------------------|------|------|
| Established    | --- | 20-90%*         | 50-75%           | ---  | ---  |

\*Timing of manure incorporation is critical for the reduction of NH<sub>3</sub> emissions. Immediate incorporation leads to the greatest reduction.

#### Additional Considerations

Land application should be performed based upon a nutrient management plan following the USDA NRCS Conservation Practice Standard 590-Nutrient Management.

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For soil manure, the incorporation should be done within 3 days of surface broadcasting. For liquid and slurry manure, manure must be incorporated immediately after land application using implements attached to the application equipment, or a second tractor operating behind the application equipment.

#### More information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- Air Management Practices Assessment Tool (AMPAT) of Iowa State University
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

#### ➤ Conservation Measure Description: Banding

##### Description

Band spreading of manure involves the application of liquid manure in narrow bands either directly from a spreader hose or through a sliding shoe that rides along the soil surface.

A drop tube (or hose) spreader is a boom which has a number of hoses connected to it, distributing the liquid manure close to the ground in strips or bands. It is fed with liquid manure from a single pipe, relying on the pressure at each of the hose outlets to provide even distribution. Advanced systems use rotary distributors to proportion the liquid manure evenly to each outlet.

A drop tube or hose with immediate incorporation entails immediate incorporation of ammonia using standard agricultural practices such as tillage, or other practices that are the equivalent, directly behind the tube or hose nozzle.

A trailing shoe/sliding foot spreader is a similar in configuration to the drop tube spreader with a shoe added to each hose allowing the liquid manure to be deposited in neat rows under the crop canopy onto the soil surface or just below the soil surface.

##### Effectiveness

| Classification | PM  | NH <sub>3</sub> | H <sub>2</sub> S* | VOCs* | GHGs |
|----------------|-----|-----------------|-------------------|-------|------|
| Established    | --- | 30-40%          | ---               | ---   | ---  |

\*Possible odor and VOCs reductions; it is expected that H<sub>2</sub>S will be reduced in a similar manner as ammonia but research does not quantify the reductions at this time

##### Additional Considerations

Land application should be performed based upon a nutrient management plan following the USDA NRCS Conservation Practice Standard 590-Nutrient Management.

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## More Information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- Beneficial Management Practices for Mitigating Hazardous Air Emissions from Animal Waste In Wisconsin

### ➤ Conservation Measure Description: Low Pressure Application Systems

#### Description

This conservation measure involves the application of liquid manure using center pivot and liner –move irrigation system. It is to use the irrigation system at low pressures using drop nozzles. Larger droplets result in lower emissions but may cause infiltration problems on some soils. Designed systems and sprinkler packages should not exceed 35 psi. This conservation measure is effective on ammonia, hydrogen sulfide and odor reduction.

#### Additional Considerations

Land application should be performed based upon a nutrient management plan following the USDA NRCS Conservation Practice Standard 590-Nutrient Management.

Low pressure overhead sprinklers and wheel lines do not qualify as Low Pressure Application (LPA) Systems technologies. Producers should consult with Certified Irrigation Designer and Nutrient Management Planner before converting non-LPA pivots and linear move systems. Practice is not recommended on highly erodible land.

## More Information

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- “Rules for the Control of Ammonia from Dairy Farms” by Idaho Department of Environmental Quality

### ➤ Conservation Measure Description: Subsurface Application

#### Description

For liquid manure, subsurface irrigation is a specialized irrigation method that allows for precise applications of liquid to the root zone of the plant. System requires specialized filtering system to handle wastewater solids and specialized “wastewater approved” drip lines should be used to prevent clogging. This measure is effective on ammonia, hydrogen sulfide and odor reduction.

Subsurface application of solid manure (e.g., poultry) is newly developed technology by USDA-ARS to mitigate ammonia emissions from land application. It may be accomplished by injecting

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solid manure into subsurface of the soil. ....

### **Additional Considerations**

Land application should be performed based upon a nutrient management plan following the USDA NRCS Conservation Practice Standard 590-Nutrient Management.

In application of subsurface irrigation system, in addition to using wastewater approved drip lines, special attention should be taken in the selection of filter media and selecting backwash frequencies.

### **More Information**

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- “Rules for the Control of Ammonia from Dairy Farms” by Idaho Department of Environmental Quality
- eXtension

## **4.2 Management Practices**

In addition to taking improved application methods to mitigate air emissions, some management practices in land application may also result in reduced air emissions.

### **Conservation Measures:**

- Application according to agronomic recommendation
- Application below no-till residue
- Utilization of cover crops
- Application under cool and calm weather conditions (timing)

### **Description**

Application of manure nutrients should always be made at agronomic rates to avoid excess application that exacerbates N losses. Agronomic application is the application of nutrients to meet crop needs. Agronomic application rate is determined by knowing the nutrient content of the soil (soil test), the nutrient content of the manure (manure test), and the crop nutrient needs at the time of application (estimated or historical value). By matching crop needs to available nutrients, over application of nitrogen and subsequent NH<sub>3</sub> and N<sub>2</sub>O emission can be avoided. A nutrient planner can help determine agronomic rate and plan annual applications to match crop needs.

The practice of no-till crop harvesting is beneficial in reducing PM emission from wind and water transport, and increasing or maintaining soil tilth. The stubble left behind creates a

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surface cover that helps protect against soil loss. When applying manure the following year to new crops, the manure should be applied under the crop residue, not on top. Applying manure on top of the residue increases exposure to ambient conditions and NH<sub>3</sub> volatilization losses.

Cover crops reduce the amount of surface exposed and provide root structures to hold soil in place. The use of cover crops, instead of leaving fields bare/fallow, decreases PM and losses of NH<sub>3</sub> and N<sub>2</sub>O by providing surface cover and nutrient uptake, respectively. Cover crops also reduce nitrate leaching during the wet season by taking up soil nitrate.

Temperature, humidity, wind speed, and precipitation all influence the rate of NH<sub>3</sub>, PM, and odor losses. Ammonia loss increases exponentially with rising temperatures, and increases with greater wind speeds. PM losses also increase with increasing temperatures which dry out the soil, and increased wind speed that moves soil and manure particles from the surface into the ambient air. Therefore, the application of manure during cool, calm weather will decrease the amount of PM and NH<sub>3</sub> volatilized from the manure. Applying in the early morning or late evening will not only reduce NH<sub>3</sub> volatilization, but will also reduce the transport of PM and odor to surrounding neighbors. Light precipitation (less than 0.15 inches) following application can also decrease NH<sub>3</sub> volatilization by binding NH<sub>3</sub> in the aqueous phase and moving it into the soil profile.

#### **Additional Considerations**

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#### **More Information**

- USDA NRCS Conservation Practice Standard 590: Nutrient Management
- “Air Quality management Policy and Best management Practices for Dairy Operations” by Yakima Regional Clean Air Agency

### **4.3 Others**

#### **Conservation Measures:**

- Installation of windbreaks or shelterbelts

#### **Description**

Windbreaks or shelterbelts could be either natural (e.g., a line of trees) or artificial (e.g., a solid brick or hay bale wall). Windbreaks mitigate emissions through multiple pathways. First, windbreaks break or slow the wind and thus reduces the transport of emitted gases, particulate, and odor from the farm. A windbreak, composed of trees or a physical barrier, will



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partially reduce wind speeds for a distance of roughly 30 times its height. Secondly, windbreaks promote mixing and dispersion of emitted gases and odor, which dilute the respective emissions, with respect to the receiver. Thirdly, windbreaks intercept particulate and odor, which subsequently break down as in the case of odorous compounds, or is deposited on site as in the case of particulate. The effectiveness of a windbreak, therefore, depends on its placement, height, spacing or porosity, and prevailing direction of wind and its fluctuations. Windbreak structures ranging even in modest heights ranging from 20 to 30 feet can provide significant mitigation of odor and particulate problem. These structures can be installed on individual systems (barns, lagoons, compost or manure piles, etc) on the entire production farm. Other indirect benefits that accrue from installation of windbreaks, especially of the natural kind include: (i) alleviation of complaints which are sometimes influenced by visual images of the farm, and (ii) enhanced landscape aesthetics of the farm.

### **Additional Considerations**

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### **More Information**

- “Air Quality management Policy and Best management Practices for Dairy Operations”  
by Yakima Regional Clean Air Agency

**Ex. 6 - Personal Privacy**

Dear **Ex. 6 - Personal Privacy**

Thank you for your letter of September 26, 2009, to the U.S. Environmental Protection Agency (EPA) regarding agricultural air pollution. I appreciate your interest and concern for the environment.

EPA is committed to using the best science available when making decisions in order to protect public health and the environment. The Agency is currently involved in collecting baseline air emissions data from AFOs as part of the National Air Emissions Monitoring Study. The monitoring study will provide EPA with essential data needed to develop emission-estimating methods and tools, which will assist EPA and the agriculture industry in determining AFOs' compliance status. We are also actively engaged with both the U.S. Department of Agriculture and the agriculture industry in identifying control technologies and conducting research to better quantify the reductions possible with these technologies.

Again, thank you for your letter. We appreciate the opportunity to be of service and hope the information provided is helpful.

Sincerely,

Steve Page  
Director  
Office of Air Quality Planning and Standards

cc:  
Ag Counselor to the Administrator, US EPA, Larry Elworth



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

NOV 01 2013

OFFICE OF  
AIR AND RADIATION

Ms. Hannah Connor  
The Humane Society of the United States  
Animal Protection Litigation  
2100 L Street, NW  
Washington, D.C. 20037

Dear Ms. Connor:

This letter is in response to questions raised during our phone conversation of August 20, 2013, and your follow-up email dated September 5, 2013, concerning your petition to list animal feeding operations (AFOs) as a category for regulation under section 111 of the Clean Air Act.

As we discussed during the call, our current plan is to address your petition following completion of the National Air Emissions Monitoring Study, a study that involves the collection and analysis of air emissions data from numerous AFOs throughout the country. We are presently engaged with the EPA Science Advisory Board on our analysis of the data from broiler farms and open sources located at swine and dairy facilities. With respect to your questions about opening a docket and assigning a Start Action Number, such steps would be taken if our analysis of the data leads us to begin a formal rulemaking process.

If you have any questions regarding this matter, please contact William Schrock of my staff at (919) 541-5032.

Sincerely,

A handwritten signature in black ink, appearing to read "Robin Dunkins", is written over a horizontal line.

Robin Dunkins, Group Leader  
Natural Resources Group  
Sector Policies and Programs Division

**EPA/USDA Climate Coordination Discussion Agenda  
February 18, 2016**

**Climate Efforts**

- Biomass
  - SAB Review
  - April 7 Workshop
- EO Sustainability: Offsets
- Land Use, Land Use Change and Forestry (LULUCF) Projections
- RFS program coordination
  - Volume standard rules
  - Ongoing pathways work
  - Renewables Enhancement and Growth Support (REGS) rule
  - Litigation update
- Other biofuels work: Mid-level ethanol blends
- Energy Star Industrial Program
- AgSTAR / Biogas Opportunities Roadmap
- Loan Programs for Rural Utilities

**Other Areas of Coordination**

- Wildland and Prescribed Fires
- Emission Estimates for Animal Feeding Operations
- USDA/EPA Interagency Workgroup on Ammonia
- Development of Best Management Practices Information
- EPA's PM<sub>2.5</sub> SIP Requirements Rule (ammonia as a PM<sub>2.5</sub> precursor)
- Indoor Air (Radon/Healthy Homes)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
RESEARCH TRIANGLE PARK, NC 27711

FEB 17 2012

**MEMORANDUM**

OFFICE OF  
AIR QUALITY PLANNING  
AND STANDARDS

**SUBJECT:** Animal Feeding Operations Air Emissions Estimating  
Methodologies from the National Air Emissions Monitoring Study

**FROM:** Stephen D. Page, Director  
Office of Air Quality Planning and Standards (C404-04)

**TO:** Ed Hanlon  
Designated Federal Officer  
Animal Feeding Operations Emission Review Panel  
EPA Science Advisory Board Staff Office (1400R)

This memorandum requests that the Science Advisory Board (SAB) review and comment on the draft emissions estimating methodologies (EEMs) for animal feeding operations (AFOs). In preparation for this review, the SAB has formed the *Animal Feeding Operations Emission Review Panel*. We envision conducting multiple meetings of this panel to cover the material we are requesting to be reviewed. This memorandum contains background material and charge questions for review by the expert SAB Panel at the initial meeting. We request that these materials be forwarded to the SAB Panel for their review.

As the attachment and associated documents illustrate, the EPA staff has carefully considered the data collected as part of the National Air Emissions Monitoring Study (NAEMS) and now ask the panel to refine and comment upon our work thus far to create EEMs. To bound and define the discussion, the attachment offers charge questions for the panel to consider.

By way of background, in 2005, the EPA entered a voluntary consent agreement with the AFO industry in which AFOs that chose to sign the Air Compliance Agreement (Agreement) shared responsibility for funding a nationwide emissions monitoring study. The NAEMS monitoring protocol was developed through a collaborative effort of AFO industry experts, university scientists, U.S. Department of Agriculture and EPA scientists and other stakeholders. The monitoring study was designed to gather data for developing methodologies for estimating emissions from AFOs and to help AFOs determine and comply with their regulatory responsibilities under the Clean Air Act (CAA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Emergency Planning and Community Right-To-Know Act (EPCRA). Once the EPA publishes the applicable EEMs, the Agreement requires each participating AFO to certify that it is in compliance with all relevant requirements of the CAA, CERCLA and EPCRA.

We appreciate your efforts and those of the Panel to prepare for the upcoming meeting and look forward to discussing this project in detail. Questions regarding the attached materials should be directed to Ms. Robin Dunkins, EPA-OAQPS (telephone: 919-541-5335; email: [dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)).

Attachment

cc: Bill Harnett  
Robin Dunkins  
Larry Elmore  
Lawrence Elworth  
Allison Mayer  
Janet McCabe  
Peter Tsirigotis

## ATTACHMENT

### Regulatory Background

In 2005, the EPA entered a voluntary consent agreement with the animal feeding operations (AFO) industry in which AFOs that chose to sign the Air Compliance Agreement (Agreement) shared responsibility for funding the National Air Emissions Monitoring Study (NAEMS). Approximately 2,600 AFOs, representing nearly 14,000 facilities that include broiler, dairy, egg layer and swine operations, received the EPA's approval to participate in the Agreement.

To provide a framework for the NAEMS, AFO industry experts, university and government scientists and other stakeholders collaborated to develop a comprehensive monitoring plan. The study was designed to generate scientifically credible data to characterize emissions from the participating animal sectors.

Consistent with the Agreement, the Agriculture Air Research Council (AARC), a nonprofit entity comprised of participating AFO industry representatives, administered the monitoring study. The AARC was responsible for selecting the Independent Monitoring Contractor (IMC) and the study's Science Advisor with EPA approval. The Agreement outlined the roles and responsibilities of the AARC, the IMC and the Science Advisor.

The monitoring plan specified the general geographic location of the farms to be monitored, animal production phase, ventilation type, manure management/handling system and other pertinent information for each animal sector.

- For broilers, two sites were to be monitored - one on the West Coast and the other in the Southeast. Both were to be mechanically ventilated and have litter on the floor.
- For the swine industry, the sites were to be located in the Southeast (sow and finisher), Midwest (sow and finisher), and West (sow). Mechanically-ventilated buildings, a deep pit building, lagoons and basin manure storage types were to be monitored.
- For dairy, both naturally- and mechanically-ventilated buildings, lagoons and basins were monitored. Five dairies were monitored, one dairy in each of the following geographical areas: Northeast, Midwest, Northwest, West and South.

For confinement sources, the IMC monitored for ammonia ( $\text{NH}_3$ ), particulate matter ( $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , TSP), volatile organic compounds (VOCs) and hydrogen sulfide ( $\text{H}_2\text{S}$ ). For lagoons and basins,  $\text{H}_2\text{S}$ ,  $\text{NH}_3$  and VOC were to be monitored. Accordingly, the EPA is then responsible for developing EEMs for each of these pollutants.

### Charge to the Science Advisory Board (SAB) AFO Air Emissions Review Panel

In preparation for the first and second meeting, the EPA has analyzed the NAEMS data for two broiler sites and nine swine and dairy lagoons/basins. For the purpose of this study, the EPA used the description of a lagoon and basin as provided in the MidWest Plan Service "Manure Storages" (MWPS-18 Section 2) document. According to MWPS, "A lagoon is a biological treatment system designed and

operated for biodegradation of organic matter in animal manure to a more stable end product. A basin, while similar to but smaller than a lagoon, is designed to store manure only and is not a treatment system.”

For a broiler confinement house, the EPA has developed draft EEMs for  $\text{NH}_3$ ,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , TSP, VOC and  $\text{H}_2\text{S}$ . For swine and dairy lagoons/basins, the EPA has only developed a draft EEM for  $\text{NH}_3$ . The documents provided to the SAB describe the sites monitored; the data submitted to the EPA; and a detailed discussion of the statistical methodology used to develop the draft EEMs. This material is provided to inform the SAB panel of the EEM development process used by the agency. In subsequent meetings, the EPA will address draft EEMs for egg-layers, swine and dairy confinement houses and other pollutants for swine and dairy lagoons/basins.

### **Issue 1: Statistical Methodology used to develop draft EEMs**

The EPA seeks the SAB’s input on the statistical methodology used by the EPA to develop the draft EEMs. Section 7.0 and 8.0 of the broiler document and section 5.0 of the swine and dairy lagoon/basin document provide an overview of the statistical methodology used to develop the draft EEMs. A flow diagram of the statistical methodology is provided in Figure 7-1 in the broiler document and Figure 5-1 in the swine and dairy lagoon/basin document. The EPA considers this statistical methodology to be the best approach for analyzing the data and intends to use this same approach to develop draft EEMs for the egg-layers, swine and dairy confinement houses.

Using the process described in the sections listed above, we developed a mean trend function that provides a point prediction of emissions under a given set of conditions. We chose an appropriate mean trend function to quantify the relationship between predictor variables and pollutant emissions by analyzing the emissions data and incorporating knowledge of the emissions generating processes. The EEM development process also involves choosing a probability distribution and covariance function to appropriately quantify other contributions to variability in emissions, and thereby to accurately quantify methods at all stages. If necessary, we will adjust the statistical methodology based on our review of the SAB’s input.

**Question 1:** Please comment on the statistical approach used by the EPA for developing the draft EEMs for broiler confinement houses and swine and dairy lagoons/basins. In addition, please comment on using this approach for developing draft EEMs for egg-layers, swine and dairy confinement houses.

### **Issue 2: Statistical Methodology used to develop swine and dairy lagoon/basin draft EEMs**

After conducting an initial analysis of the NAEEMS data submitted for swine and dairy lagoons/basins, the EPA decided to focus on developing a draft EEM for  $\text{NH}_3$ . The EPA’s review of current literature indicates that lagoon/basin emissions are influenced by several factors, one of these being lagoon/basin temperature. To ensure that the dataset used to develop the draft EEM represented all seasonal meteorological conditions for the entire two year monitoring period, the EPA decided to combine the swine and dairy data. Combining the swine and dairy lagoon/basin dataset also resulted in combining lagoon and basin emissions data.



To maximize the number of NH<sub>3</sub> emissions measurements used to develop the draft EEM, the EPA used static predictor variables as surrogates for data on lagoon/basin conditions (i.e., nitrogen content of lagoon liquid, lagoon pH, oxidation reduction potential and temperature). The static variables of animal type, total live mass of animal capacity on the farm and the surface area of the lagoon were used to represent NH<sub>3</sub> precursor loading and the potential for release to the air. Consistent with operating parameters associated with statistical degrees-of-freedom, we concluded that two degrees of freedom was the maximum that the data would credibly allow for inclusion in the developing the draft EEM. As a result, the EPA developed three sets of draft EEMs, using the paired combinations of these static variables (i.e., animal type, surface area, farm size) and the continuous variables representing meteorological conditions (i.e., temperature, atmospheric pressure, humidity, wind speed, solar radiation).

**Question 2:** Please comment on the agency's decision to combine the swine and dairy dataset to ensure that all seasonal meteorological conditions are represented. In addition, the agency also seeks the SAB's comments on whether the agency should combine lagoon and basin data.

**Question 3:** Please comment on the agency's decision to use static predictor variables as surrogates for data on lagoon/basin conditions. Given the uncertainties in that approach, does the SAB recommend that EPA consider specific alternative approaches for statistically analyzing the data that would allow for the site-specific lagoon liquid characteristics to be used as predictor variables?

**Question 4:** Does the SAB recommend that EPA consider alternative approaches for developing the draft NH<sub>3</sub> EEM that balances the competing needs for a large dataset (to reflect seasonal meteorological conditions) versus incorporating additional site-specific factors that directly affect lagoon emissions. If so, what specific alternative approaches would be appropriate to consider?

### **Issue 3: Negative and Zero Data**

Some emissions measurements were reported to the EPA as either negative or zero emissions values. When developing the draft EEMs, the EPA used the following general approach regarding inclusion of negative and zero emissions values in the data.

- The EPA evaluated whether the negative or zero values represent the variability in emissions measurements due to the means of obtaining the measurements. For example, negative values for a pollutant concentration might result when the concentration of the pollutant falls below the minimum detection limit of a monitor. For all EEM datasets, the EPA included zero values because these values potentially represent instances where the emissions from the source were zero (e.g., a frozen lagoon), or the background and pollutant concentrations from the source were the same. Regarding negative values, in cases where the dataset available to develop draft EEMs was relatively large and the emissions were significantly greater than zero, the EPA excluded negative emissions values from the EEM datasets. The EPA used this approach to develop the entire broiler confinement house draft EEMs and swine and dairy lagoon/basin NH<sub>3</sub> draft EEMs.
- The EPA reviewed the data to see if the data quality measures were properly performed according to the Quality Assurance Project Plan.

- If the EPA identified data where the quality assurance measures were not followed, we contacted the science advisor to determine if the corrected data could be submitted to the EPA.

The EPA has conducted a preliminary analysis of the swine and dairy lagoon/basin H<sub>2</sub>S emissions data. Our analysis indicates that we may need to modify our approach for handling negative and zero data in order to develop a draft H<sub>2</sub>S EEM for swine and dairy lagoons/basins. A modification may be needed due to the limited number of H<sub>2</sub>S emissions values, the presence of a greater percentage of negative emissions values and emissions values that are closer to zero than the NH<sub>3</sub> emissions for swine and dairy lagoons/basins. The EPA's concern is that failure to include the negative measurements in the dataset, or setting them equal to zero, would result in an EEM that fails to fully quantify uncertainty around the point prediction of emissions attributable to measurement error.

**Question 5:** Please comment on the EPA's approach for handling negative or zero emission measurements.

**Question 6:** In the interest of maximizing the number of available data values for development of the draft H<sub>2</sub>S EEMs for swine and dairy lagoons/basins, does SAB recommend any alternative approaches for handling negative and zero data other than the approach used by the agency.

#### **Issue 4: Volatile Organic Compounds (VOC) Data**

The EPA reviewed the VOC data submitted for the California and Kentucky broiler sites. The two sites used different VOC measurement techniques. Based on our analysis of the measurement and analytical techniques and the VOC data, the EPA decided to use only the VOC data from the Kentucky sites when developing the draft VOC EEM.

**Question 7:** Please comment on the approach EPA used to develop the draft broiler VOC EEM.

**To:** Shinkman, Susan[Shinkman.Susan@epa.gov]  
**From:** Sullivan, Tim  
**Sent:** Thur 1/21/2016 3:55:48 AM  
**Subject:** RE: NAEMS Meeting: Materials in prep for tomorrow's meeting with Janet et al.

Good memory! Yes, environmental groups filed two complaints against EPA in January 2015,

## **Ex. 5 - Deliberative Process**

After the last OAR-ORD-OECA NAEMS briefing (early fall 2014), two coalitions of environmental organizations filed complaints against the Agency in January 2015 for failing to take action on the following two Clean Air Act petitions:

1. A 2009 petition to list CAFOs as a source category under Section 111 – full petition; and
2. A 2011 petition for failing to set a NAAQS for ammonia emissions – full petition.

The D.C. District Court recently dismissed EIP's complaint regarding the 2011 ammonia petition because the it did comply with the Clean Air Act's 180-day citizen suit notice provision. I am

## **Ex. 5 - Deliberative Process**

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

Help eliminate environmental violations - report tips and complaints at:  
<http://www.epa.gov/compliance/complaints/index.html>

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**From:** Shinkman, Susan  
**Sent:** Wednesday, January 20, 2016 6:54 PM  
**To:** Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>  
**Subject:** RE: NAEMS Meeting: Materials in prep for tomorrow's meeting with Janet et al.

Tim,

|                                     |
|-------------------------------------|
| <b>Ex. 5 - Deliberative Process</b> |
|-------------------------------------|

I forget the details, just want to make sure I know the status.

Thanks.

Susan

**From:** Sullivan, Tim  
**Sent:** Wednesday, January 20, 2016 6:20 PM  
**To:** Giles-AA, Cynthia <[Giles-AA.Cynthia@epa.gov](mailto:Giles-AA.Cynthia@epa.gov)>  
**Cc:** Huffman, Linda <[Huffman.Linda@epa.gov](mailto:Huffman.Linda@epa.gov)>; Shinkman, Susan <[Shinkman.Susan@epa.gov](mailto:Shinkman.Susan@epa.gov)>; Kelley, Rosemarie <[Kelley.Rosemarie@epa.gov](mailto:Kelley.Rosemarie@epa.gov)>; Brooks, Phillip <[Brooks.Phillip@epa.gov](mailto:Brooks.Phillip@epa.gov)>; Fried, Gregory <[Fried.Gregory@epa.gov](mailto:Fried.Gregory@epa.gov)>  
**Subject:** FW: NAEMS Meeting: Materials in prep for tomorrow's meeting with Janet et al.

Cynthia:

The final briefing paper for tomorrow's meeting with OAR and ORD on the National Air Emissions Monitoring Study (NAEMS) of animal feeding operations is attached. OAR staff has

## Ex. 5 - Deliberative Process

Please let us know if you have any questions ahead of tomorrow's meeting.

Tim

---

Timothy J. Sullivan  
Air Enforcement Division  
Office of Civil Enforcement

Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (MC 2242A)  
Washington, D.C. 20460

Phone: 202.564.2723 | Email: [sullivan.tim@epa.gov](mailto:sullivan.tim@epa.gov)

Help eliminate environmental violations - report tips and complaints at:  
<http://www.epa.gov/compliance/complaints/index.html>

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**From:** Dunkins, Robin

**Sent:** Wednesday, January 20, 2016 5:41 PM

**To:** Fried, Gregory <[Fried.Gregory@epa.gov](mailto:Fried.Gregory@epa.gov)>; Sullivan, Tim <[Sullivan.Tim@epa.gov](mailto:Sullivan.Tim@epa.gov)>; Schrock, Bill <[Schrock.Bill@epa.gov](mailto:Schrock.Bill@epa.gov)>; Spence, Kelley <[Spence.Kelley@epa.gov](mailto:Spence.Kelley@epa.gov)>; Vette, Alan <[Vette.Alan@epa.gov](mailto:Vette.Alan@epa.gov)>; Hassett-Sipple, Beth <[Hassett-Sipple.Beth@epa.gov](mailto:Hassett-Sipple.Beth@epa.gov)>; Nunez, Carlos <[Nunez.Carlos@epa.gov](mailto:Nunez.Carlos@epa.gov)>; McKinney, Doug <[McKinney.Douglas@epa.gov](mailto:McKinney.Douglas@epa.gov)>; Costa, Dan

<[Costa.Dan@epa.gov](mailto:Costa.Dan@epa.gov)>

**Subject:** FW: NAEMS Meeting: Materials in prep for tomorrow's meeting with Janet et al.

Robin Dunkins, Group Leader

Natural Resources Group

OAR/OAQPS/SPPD Mail Code: E143-03

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

919-541-5335

[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

**From:** South, Peter

**Sent:** Wednesday, January 20, 2016 5:36 PM

**To:** Alston, Lala <[Alston.Lala@epa.gov](mailto:Alston.Lala@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; OAQPS WOPS <[OAQPS\\_WOPS@epa.gov](mailto:OAQPS_WOPS@epa.gov)>; OAR Briefings <[OAR\\_Briefings@epa.gov](mailto:OAR_Briefings@epa.gov)>; Sanders, Maria <[Sanders.Maria@epa.gov](mailto:Sanders.Maria@epa.gov)>; Walker, Jean <[Walker.Jean@epa.gov](mailto:Walker.Jean@epa.gov)>

**Cc:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Tsigotis, Peter <[Tsigotis.Peter@epa.gov](mailto:Tsigotis.Peter@epa.gov)>; Conner, Lisa <[Conner.Lisa@epa.gov](mailto:Conner.Lisa@epa.gov)>; Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>; Eck, Janet <[Eck.Janet@epa.gov](mailto:Eck.Janet@epa.gov)>; Johnson, Tanya <[Johnson.Tanya@epa.gov](mailto:Johnson.Tanya@epa.gov)>; McLamb, Marguerite <[McLamb.Marguerite@epa.gov](mailto:McLamb.Marguerite@epa.gov)>; Pemberton, Wanda <[Pemberton.Wanda@epa.gov](mailto:Pemberton.Wanda@epa.gov)>; Srivastava, Ravi <[Srivastava.Ravi@epa.gov](mailto:Srivastava.Ravi@epa.gov)>; Thompson, Fred <[Thompson.Fred@epa.gov](mailto:Thompson.Fred@epa.gov)>; Vasu, Amy <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>

**Subject:** NAEMS Meeting: Materials in prep for tomorrow's meeting with Janet et al.

I have attached the meeting materials in prep for tomorrow's meeting with Janet et al. on NAEMS.

Please call me or Mike Koerber with any questions relating to this information.

Thank you.

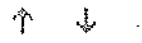
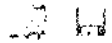
Pete South

OAR/OAQPS/IO

U.S. EPA

office: 919 541-5359

cell: 919 599-7213



NAEMS Meeting (Confirmed)

FILE

MEETING

INSERT

FORMAT TEXT

REVIEW



Accepted by Aston Lala on 1/13/2016 1:37 PM

Conflicts with another appointment.

Monday, 1/19/2016 11:45 AM

NAEMS Meeting (Confirmed)

WJC-N 5400

Thu 1/21/2016 11:00 AM

Thu 1/21/2016 11:45 AM

**To:** Janet McCabe; Robin Dunkins; Steve Page; Peter Tsirigotis; Mike Koerber; Tom Burke  
Fred Hauchman; Maureen Gwinn; Kathleen Deener; Kelley Smith; Nathan Gentry; Giles, C



RE: NAEMS



**To:** Dunkins, Robin[Dunkins.Robin@epa.gov]; Jordan, Scott[Jordan.Scott@epa.gov]; Waite, Randy[Waite.Randy@epa.gov]  
**Cc:** Schrock, Bill[Schrock.Bill@epa.gov]; StClair, Aimee[StClair.Aimee@epa.gov]  
**From:** Costa, Allison  
**Sent:** Thur 12/17/2015 7:13:06 PM  
**Subject:** FW: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371  
[OAR-16-000-2371 ltr to Janet McCabe from Barbara Sha Cox.pdf](#)  
[OAR-16-000-2371\\_draft NRG response.doc](#)

Hello,

Attached is an incoming letter EPA received related to the CAFO petitions and lack of progress on the NAEMS work, urging us to promulgate regulations for this sector. I've attached a first draft of the response and would appreciate any comments or suggestions for edits. We didn't have any standard language related to recent developments with the petitions, so I just acknowledged that the letter mentioned them, without adding any commentary.

I'll be out of the office from 12/18 – 1/4, so please reply to everyone on the list so that we can keep this moving.

Cheers,

Allison

**From:** Dunkins, Robin  
**Sent:** Tuesday, December 15, 2015 9:53 PM  
**To:** Costa, Allison <Costa.Allison@epa.gov>  
**Cc:** Schrock, Bill <Schrock.Bill@epa.gov>; StClair, Aimee <StClair.Aimee@epa.gov>  
**Subject:** Fwd: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

Allison, congratulations on your first OAQPS control! Bill should be able to share a few past responses. We should also coordinate response with OGC since NSPS litigation still pending. Also keep HEID in the loop on the response.

Thanks,

Robin

Robin Dunkins, Leader

Natural Resources Group

OAR/OAQPS/SPPD

RTP, NC 27711

Office: 919-541-5335

Cell: 919-605-1178

[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

Begin forwarded message:

**From:** "Johnson, Tanya" <[Johnson.Tanya@epa.gov](mailto:Johnson.Tanya@epa.gov)>  
**To:** "Dunkins, Robin" <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>, "StClair, Aimee" <[StClair.Aimee@epa.gov](mailto:StClair.Aimee@epa.gov)>  
**Cc:** "Vasu, Amy" <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>, "Morales, Mariel" <[Morales.Mariel@epa.gov](mailto:Morales.Mariel@epa.gov)>  
**Subject:** Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

-----Original Message-----

**From:** [cmsadmin@epa.gov](mailto:cmsadmin@epa.gov) [<mailto:cmsadmin@epa.gov>]  
**Sent:** Tuesday, December 15, 2015 11:09 AM  
**To:** Vasu, Amy <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>; Eck, Janet <[Eck.Janet@epa.gov](mailto:Eck.Janet@epa.gov)>; Johnson, Tanya <[Johnson.Tanya@epa.gov](mailto:Johnson.Tanya@epa.gov)>; Hackel, Angela <[Hackel.Angela@epa.gov](mailto:Hackel.Angela@epa.gov)>; Brown, Annette <[Brown.Annette@epa.gov](mailto:Brown.Annette@epa.gov)>  
**Subject:** CMS New Assignment - Jean Walker - OAR-16-000-2371

Control OAR-16-000-2371 has been assigned to your office on 12/15/15 11:08 AM by Jean Walker. Please go to the CMS webpage to view the details of the control.

Summary Information -

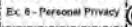
Control Number: OAR-16-000-2371

Control Subject: Re: Pending, unanswered citizen petitions to protect public health from factory farm air pollution.

From: Cox, Barbara S; McCabe, Janet G.

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CMS should be directed to CMS Support at 202-564-4985 or CMS [Information@epa.gov](mailto:Information@epa.gov).

**To:** kari.cohen@wdc.usda.gov[kari.cohen@wdc.usda.gov];  
greg.zwicke@ftc.usda.gov[greg.zwicke@ftc.usda.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov];  
Voell, Christopher[voell.christopher@epa.gov]  
**Cc:** Jason.Weller@wdc.usda.gov[Jason.Weller@wdc.usda.gov];  
christopher\_j\_adamo@ceq.eop.gov[christopher\_j\_adamo@ceq.eop.gov]; McCabe,  
Janet[McCabe.Janet@epa.gov]  
**From:** @aol.com  
**Sent:** Wed 4/27/2016 8:06:15 AM  
**Subject:** Fwd: PROPOSAL - EQIP - Stakes rise exponentially in VW case  
[EnviroCircMainDeck.pdf](#)

Kari, Greg, Pamela and Chris,

See attached deck in the context of what is the greatest opportunity in history to compel a corporation to offset/mitigate (abate in perpetuity) environmental and human health harm done, effectively underwriting the genesis of a new paradigm in agriculture, enabling the best possible environmental outcome here in the US. It appears the executives at VW are as motivated as can be to get this settled, and to mitigate the health damage done, **including premature deaths**, as criminal charges appear likely:

Volkswagen held an internal presentation in 2006 explaining how to evade US diesel emissions testing, according to a *New York Times* report today. The report cites two individuals who've seen the presentation — an actual PowerPoint file — which has been uncovered in the course of the ongoing investigation into the scandal. Dieselgate, as it's been called, has already felled numerous executives and threatens to cost Volkswagen tens of billions of dollars.

<http://www.nytimes.com/2016/04/27/business/international/vw-presentation-in-06-showed-how-to-foil-emissions-tests.html>

The management board led by Martin Winterkorn, the chief executive who resigned in September after the admission of cheating, repeatedly rebuffed lower-ranking employees who submitted technical proposals for upgrading the emissions controls, according to the two people who attended meetings where the proposals were discussed. The management board rejected the proposals because of cost, the people said.

More effective emissions equipment would have made Volkswagen vehicles hundreds of dollars more expensive, without providing a benefit that customers could perceive. In the United States, even a modestly higher sticker price would have made it more difficult for Volkswagen to compete with rivals like Toyota and Honda.

But cleaner diesel would also have spared Volkswagen a scandal that has already caused sales in the United States to plunge 13 percent from January through March. And repairing diesels in the United States will cost additional hundreds of millions, if not billions, of dollars.

We will appreciate the opportunity to present the SEP option (up to 80% of total US fines/penalties) to the Mediator, Robert Mueller, to include both VW's defense and DOJ's legal teams, in Washington DC, as soon as next week.

## Is Exxon up Next after Semptra Energy for SEP Mitigation proposals?

Exxon: <http://bit.ly/22WOLGm>

My best,

Tom Martin  
CEO  
EnviroCirc  
(781) 686-2133

-----Original Message-----

From: [Ex. 6 - Personal Privacy](#) @aol.com>

To: kari.cohen <kari.cohen@wdc.usda.gov>; greg.zwicke <greg.zwicke@ftc.usda.gov>; franklin.pamela <franklin.pamela@epa.gov>; voell.christopher <voell.christopher@epa.gov>

Cc: jason.weller <jason.weller@wdc.usda.gov>; christopher\_j\_adamo <christopher\_j\_adamo@ceq.eop.gov>; mccabe.janet <mccabe.janet@epa.gov>

Sent: Mon, Apr 25, 2016 7:33 am

Subject: PROPOSAL - EQIP funds for EnviroCirc Maumee Watershed Air Quality Study

Dear Kari, Greg, Pamela and Chris,

Whereas publication of our CIG Report has only just now occurred, we find ourselves on the doorstep of an historic opportunity to mitigate the two largest CAA violations in US history, at the eleventh possible hour. We'd appreciate the help of the NRCS, in the form of EQIP funds and expertise - in alignment with the EPA. We propose that Greg Zwicke be assigned to oversee/monitor the actual test on behalf of both NRCS and EPA.

You'll appreciate that everything is on an increasingly accelerated timeline for us in light of the timeline for both the Volkswagen and Semptra Energy offset/mitigation goals, in alignment with the wishes of ARB and the EPA. Judge Breyer has given Volkswagen until June 21 to submit its final proposal to the court, and my outreach to Semptra's Chairman/CEO, Debra Reed, has me in ongoing discussions with her lead strategist, Jeffrey Reed (<http://bit.ly/1VTDM11>). My goal with Semptra is to help craft their strategic solution to mitigate 97,000 tons of Methane (Aliso Canyon), and have that arrived at, accepted by ARB, and publicly revealed prior to the VW announcement.

Our recent communications with President-Elect of the USPPC, Ken Maschhoff, leads me to believe it is possible to bring that organization into alignment with our broader environmental goals for the transformation of farmland to organic, for the health and environmental benefits achievable under our Circular Farm Management Protocols (<http://bit.ly/1UbVdZH>). We have an urgent need.

### VISUALIZATION OF MITIGATION

We've spoken to leadership at both Los Gatos and Telops regarding use of both of their Ammonia/Methane detection technologies/cameras simultaneously to document the off-gassing above a 10,000 hog manure lagoon test site where we propose to transform our first lagoon into a mitigation bank. While we can do this wherever we choose, we think it might be best for NRCS if we choose to do this in the Maumee watershed - in parallel with Terry Crosby's other goals there.

#### **Telops:**

<http://bit.ly/26nOnoH>

#### **Los Gatos:**

<http://bit.ly/1OvbDps>

## AMMONIA MEASUREMENTS BY THE NASA TROPOSPHERIC EMISSION SPECTROMETER (TES)

<http://bit.ly/1YPRQGS>

Our goal is to cross-correlate this imagery with Ammonia satellite detection capabilities from NASA to arrive at a triangulated 3D-modeled/animated view of the "cloud" of airborne gas emanating from a given manure lagoon in the **"Before EnviroCirc"** state, so as to quantify precisely the amount of Methane, Nitrous Oxide and Ammonia PM2.5 that we literally make disappear upon treatment of the lagoon at a given site within four months after treatment - and in perpetuity - thus the *Mitigation Bank* - as verified by an independent third-party, and perpetual live-stream monitoring by the EPA.

The deliverable is a computer-based, color-coded representation of each gas collectively, and individually, with the ability to toggle between each to view the "inventory" of each gas in tons. This imagery makes real the hypothetical, and leads to a future wherein the question of whether and how much off-gassing occurs from untreated manure lagoons is answered in the most convincing way. We will feature this imagery and capability as primary to establishment of the Ammonia/Methane/Nitrous Oxide Mitigation Banking model, and we expect that both EPA and NRCS will want to utilize the same to promote a new program (in parallel with AgSTAR) that we stand ready to create for/with you.

Additionally, and as part of this request, we have approached Temple Grandin to assist us in the development of our **"EnviroBarn"** pig barn concept. Offgassing from pig farms occurs from three sources, and the barns are a factor. EnviroBarns feature zero off-gassing owing to their unique design - no slotted floors, no manure pits, no exhaust fans, thus no methane or ammonia - and no sad stories like these:

### Pig Manure Gas Blamed For Ohio Farm Workers Death:

<http://bit.ly/1NdMCnu>

### Iowa Father, Son Die From Manure Pit Fumes:

<http://usat.ly/1KA6oEN>

The primary component of the EnviroCirc offer to offset the environmental and human health damages caused by VW and Sempra Energy is the establishment of the first-of-its-kind, quantifiable, **high-value Mitigation credit market** on the global stage.

Note that the reason carbon trading and mitigation has never been properly valued is that it has never been tied to the **true health costs - in this society with the most expensive health care system on earth**. The value of carbon credits in Europe, for example, is not relevant to their value here, in health cost terms.

Below you can see why our approach, tied to the NASA/Harvard AG Ammonia study, is resonating - for the significant money it attracts - a requirement if the goal is to improve people's lives and well being. Carbon Credits have been poorly communicated/marketed. That's about to change.

Supply/Demand of Ammonia/Methane/Nitrous Oxide Credits available in our Mitigation Banks will be constrained and thus in high demand for the foreseeable future, as meeting the demands of VW and Sempra and others is a voluntary market that will exceed our ability to convert lagoons to mitigation banks at a pace sufficient to keep up with demand, thus ensuring highest prices for credits.

The plan includes branding each mitigation bank individually (like real estate), featuring it online with live-cam air/water PH monitoring, and selling credits in it via a live-online auction environment where anonymous bidders determine the value of credits sold, based on their urgency-to-buy and willingness-to-pay.

## EPA Chief Gina McCarthy - "Public Health Is What We Do"

<http://bit.ly/1VTM1KL>

You may not think about public health when you think about the Environmental Protection Agency. But Administrator Gina McCarthy wants you to.

There are "challenges to our health and well-being that result from exposures to pollution," said McCarthy.

"While we are called the Environmental Protection Agency, our major role is public health. That is what we do."

**You've visited medical schools to encourage them to discuss so-called "upstream" prevention, tackling environmental triggers before they cause health problems, such as asthma. Why?**

Air pollution causes cardiovascular disease. We know this. It's really an opportunity for us to gather together.

I'm disappointed there isn't more acknowledgement of this and that the medical profession isn't more heavily trained in looking at asthma and, instead of looking at what the treatment regimen needs to be, but also sending someone to the house to talk with parents about the cleaning products they use. People are ready for those discussions. They want to be active in their own health. They want to understand what contributes to their health problems. I think it would be great to have a concerted effort to have public health schools be more engaging and have them work with medical schools. I don't mean to sound critical of medical schools. But there's more to health than treatment.

### Harvard/NASA Study

<http://acmg.seas.harvard.edu/publications/agast/articles/paulot2013c.pdf>

Our patent is here: <http://bit.ly/1QwNiv4>

The link to our just-published NRCS CIG Report is here: <http://1.usa.gov/1Yxwhea>

In the matter of **Humane Society vs. Gina McCarthy/EPA**, HSUS were attempting to demand that the EPA regulate air emissions from CAFOs via the Clean Air Act, which effectively remains unenforced in agriculture, as compliance would put them all out of business. Of course their real goal is to shut down every CAFO - and that's just not feasible in light of the need for affordably produced protein for American consumers. Advocates of free range grazing do not always take into account the tradeoffs and other "costs" that would result from turning every animal out onto pasture across this country, but it does make for an impassioned debate.

In light of the EnviroCirc "*New Best Practice*" for elimination of manure off-gassing from over 8,000 CAFOs in the US and the adjacent croplands and barns, we anticipate the high likelihood of a fresh round of nuisance lawsuits will be filed by neighbors against pig farmers and the EPA. In order to front-run what we perceive to be a very likely outcome, we propose a strategy to phase-in CAA enforcement over perhaps 3-5 years, with a path to compliance via our patented technology.

Every nuisance lawsuit brought against livestock farmers is affectively about their odor footprint, which can extend for a five-mile radius around a manure lagoon, very legitimately impacting neighbors health and property values by -30% on average. Every lagoon that we remove from this off-gassing/odor-producing category increases neighboring property values by 30% and most importantly, restores the health of those living nearby, and thus neighborly relations and in rural farm communities.

To obtain true "*Certified Organic Pork*" status from the USDA, operators need to afford the opportunity to allow livestock access to the outdoors each day. The downside of that is that this opens the barn to flies and mosquitos that can carry disease that would not otherwise impact the livestock in a climate-controlled environment (there are tradeoffs with every approach), and half the year it's either too hot or too cold for pigs to want to get outside regardless. We are creating a new category, "**Organically Fed**", not tied to the foregoing requirement, but providing consumers with the quality of meat they seek, at the best price.

Presently "*Natural Pork*" sells for 2-3X more than traditional pork, and there is no "*Organic Pork*" available for purchase, for the most part.

A primary reason why pigs become ill in AFOs is that they live their lives with their noses mere inches above their "toilet". Our EnviroBarn design features solid floors and flo-through "*safe water*" gutters for them to play and dung in, taking advantage of their natural preference and behavior - reducing stress in

an environment offering 20% more space-per-pig than traditional AFO barns. Our approach eliminates use of antibiotics in the process of raising pigs.

In light of the foregoing, we urgently request the provision of the maximum available funding to implement two tests in the midwest, one in the Maumee Watershed, and a second in Illinois in the counties featured on the attached slide depicting the impact of 700,000 hogs on the air quality of 10 million Chicagoland residents. These funds will additionally be deployed to engage Temple Grandin and others with our architects to design the EnviroBarn with maximum animal welfare benefits as central to the equation.

My best,

Ex. 6 - Personal Privacy



**To:** StClair, Aimee[StClair.Aimee@epa.gov]; Spence, Kelley[Spence.Kelley@epa.gov]  
**From:** Dunkins, Robin  
**Sent:** Wed 12/23/2015 2:41:29 PM  
**Subject:** Fwd: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371  
[OAR-16-000-2371 ltr to Janet McCabe from Barbara Sha Cox.pdf](#)  
[ATT00001.htm](#)  
[OAR-16-000-2371 draft NRG response.doc](#)  
[ATT00002.htm](#)

Robin Dunkins, Leader  
Natural Resources Group  
OAR/OAQPS/SPPD  
RTP, NC 27711  
Office: 919-541-5335  
Cell: 919-605-1178  
[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

Begin forwarded message:

**From:** "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>  
**To:** "Dunkins, Robin" <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>  
**Cc:** "Costa, Allison" <[Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)>, "Wirth, Tom" <[Wirth.Tom@epa.gov](mailto:Wirth.Tom@epa.gov)>, "Banks, Julius" <[Banks.Julius@epa.gov](mailto:Banks.Julius@epa.gov)>, "Franklin, Pamela" <[Franklin.Pamela@epa.gov](mailto:Franklin.Pamela@epa.gov)>, "Voell, Christopher" <[voell.christopher@epa.gov](mailto:voell.christopher@epa.gov)>  
**Subject:** RE: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

Hi Robin and Allison – No comments from GHGRP on the response to this control. Thanks for the opportunity to review. And Allison, hope everything is going well with you in your new position!

(Pamela and Chris – Just flagging for you as an fyi.)

Best wishes,

Mark

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: [defigueiredo.mark@epa.gov](mailto:defigueiredo.mark@epa.gov)

**From:** Dunkins, Robin

**Sent:** Friday, December 18, 2015 7:47 AM

**To:** DeFigueiredo, Mark <[DeFigueiredo.Mark@epa.gov](mailto:DeFigueiredo.Mark@epa.gov)>

**Cc:** Costa, Allison <[Costa.Allison@epa.gov](mailto:Costa.Allison@epa.gov)>

**Subject:** Re: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

Thanks Mark. Allison is out until the new year so please make sure you cc me if there is a response. I'm in and out during the holidays but checking email.

Robin Dunkins, Leader

Natural Resources Group

OAR/OAQPS/SPPD

RTP, NC 27711

Office: 919-541-5335

Cell: 919-605-1178

[dunkins.robins@epa.gov](mailto:dunkins.robins@epa.gov)

On Dec 17, 2015, at 4:51 PM, DeFigueiredo, Mark <[DeFigueiredo.Mark@epa.gov](mailto:DeFigueiredo.Mark@epa.gov)> wrote:

Let me check internally with folks and get back to you.

Best - Mark

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: [defigueiredo.mark@epa.gov](mailto:defigueiredo.mark@epa.gov)

**From:** Costa, Allison

**Sent:** Thursday, December 17, 2015 4:30 PM

**To:** DeFigueiredo, Mark <[DeFigueiredo.Mark@epa.gov](mailto:DeFigueiredo.Mark@epa.gov)>

**Cc:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>

**Subject:** FW: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

Hi Mark,

OAQPS is working on the attached response to a controlled correspondence related to air emissions from CAFOs (and our lack of regulations). The incoming letter mentions the lack of reporting of GHGs from CAFOs as well as other air pollutants. Does GHGRP have anything to add to the draft response (or any other suggested edits)?

Cheers,

Allison

**From:** Costa, Allison

**Sent:** Thursday, December 17, 2015 2:13 PM

**To:** Dunkins, Robin <Dunkins.Robin@epa.gov>; Jordan, Scott <Jordan.Scott@epa.gov>; Waite, Randy <Waite.Randy@epa.gov>  
**Cc:** Schrock, Bill <Schrock.Bill@epa.gov>; StClair, Aimee <StClair.Aimee@epa.gov>  
**Subject:** FW: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

Hello,

Attached is an incoming letter EPA received related to the CAFO petitions and lack of progress on the NAEMS work, urging us to promulgate regulations for this sector. I've attached a first draft of the response and would appreciate any comments or suggestions for edits. We didn't have any standard language related to recent developments with the petitions, so I just acknowledged that the letter mentioned them, without adding any commentary.

I'll be out of the office from 12/18 – 1/4, so please reply to everyone on the list so that we can keep this moving.

Cheers,

Allison

**From:** Dunkins, Robin  
**Sent:** Tuesday, December 15, 2015 9:53 PM  
**To:** Costa, Allison <Costa.Allison@epa.gov>  
**Cc:** Schrock, Bill <Schrock.Bill@epa.gov>; StClair, Aimee <StClair.Aimee@epa.gov>  
**Subject:** Fwd: Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

Allison, congratulations on your first OAQPS control! Bill should be able to share a few past responses. We should also coordinate response with OGC since NSPS litigation still pending. Also keep HEID in the loop on the response.

Thanks,

Robin

Robin Dunkins, Leader

Natural Resources Group

OAR/OAQPS/SPPD

RTP, NC 27711

Office: 919-541-5335

Cell: 919-605-1178

[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

Begin forwarded message:

**From:** "Johnson, Tanya" <[Johnson.Tanya@epa.gov](mailto:Johnson.Tanya@epa.gov)>  
**To:** "Dunkins, Robin" <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>, "StClair, Aimee" <[StClair.Aimee@epa.gov](mailto:StClair.Aimee@epa.gov)>  
**Cc:** "Vasu, Amy" <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>, "Morales, Mariel" <[Morales.Mariel@epa.gov](mailto:Morales.Mariel@epa.gov)>  
**Subject:** Assigning to NRG..FW: CMS New Assignment - Jean Walker - OAR-16-000-2371

-----Original Message-----

From: [cmsadmin@epa.gov](mailto:cmsadmin@epa.gov) [<mailto:cmsadmin@epa.gov>]  
Sent: Tuesday, December 15, 2015 11:09 AM  
To: Vasu, Amy <[Vasu.Amy@epa.gov](mailto:Vasu.Amy@epa.gov)>; Eck, Janet <[Eck.Janet@epa.gov](mailto:Eck.Janet@epa.gov)>; Johnson, Tanya <[Johnson.Tanya@epa.gov](mailto:Johnson.Tanya@epa.gov)>; Hackel, Angela <[Hackel.Angela@epa.gov](mailto:Hackel.Angela@epa.gov)>; Brown, Annette <[Brown.Annette@epa.gov](mailto:Brown.Annette@epa.gov)>  
Subject: CMS New Assignment - Jean Walker - OAR-16-000-2371

Control OAR-16-000-2371 has been assigned to your office on 12/15/15 11:08 AM by Jean Walker. Please go to the CMS webpage to view the details of the control.

Summary Information -

Control Number: OAR-16-000-2371

Control Subject: Re: Pending, unanswered citizen petitions to protect public health from factory farm air pollution.

From: Cox, Barbara S; McCabe, Janet G.

Note: This Email was automatically generated. Please do not attempt to respond to it. You can access this control at <https://cms.epa.gov/cms>. Questions or comments concerning CMS should be directed to CMS Support at 202-564-4985 or CMS Information@epa.gov.

**To:** Koerber, Mike[Koerber.Mike@epa.gov]; Hubbell, Bryan[Hubbell.Bryan@epa.gov]  
**Cc:** Mazza, Carl[Mazza.Carl@epa.gov]; Keating, Terry[Keating.Terry@epa.gov]  
**From:** Shoaff, John  
**Sent:** Thur 10/15/2015 1:27:51 PM  
**Subject:** FW: The NAEMS one pager I sent to Burke  
NAEMS action plan in brief - draft.docx

Mike and Bryan,

Here's some background on NAEMS CAFO issue, see below and attached, that ORD is interested in including on the annual mtg agenda. We've proposed it be identified as a follow-up action item and I expect to hear back from Dan on how Tom Burke might react to that or whether he wants something more prominent included for discussion.

In any event, wanted you to be aware of below and please chime in on this during prebrief if there's a need to elaborate and/or whether we might also want to send a separate note and background should Tom B. desire to raise this directly with Janet.

Note I will also circulate ORD's proposed agenda items that they're bouncing off of their AA. Bullet immediately below is how they summarized the CAFO issue. There are other issues that they raise that we'll also want to touch upon with prebrief today as you'll see.

- CAFO final report on Ag/Nitrogen needs to be reworked by NRMRL/OAQPS in conjunction with USDA after SAB Recommendations. Proposal currently in limbo with IOAA of ORD and OAR. (One pager explanation has been provided for pre-meeting discussion by AAs).

Thx.

John

**John Shoaff** | Leader, Policy Support Group

Office of Air Policy & Program Support (OAPPS)

Office of Air & Radiation | U.S. EPA | WJC North 5442-B

1200 Pennsylvania Ave. NW | MC 6103A | Washington, D.C. | 20460 | USA

[ShoaffJohn@epa.gov](mailto:ShoaffJohn@epa.gov) | 1-202-564-0531 Direct | 1-202-257-1755 Mobile

**From:** Costa, Dan

**Sent:** Wednesday, October 14, 2015 10:02 PM

**To:** Shoaff, John

**Cc:** Mazza, Carl; Keating, Terry

**Subject:** The NAEMS one pager I sent to Burke

I don't know whether you want to use this to pre-brief Janet. He may want to check in on this in a conversation before the AA summit. Here is part fo the note I sent to Tom:

The study itself was a fairly elaborate emissions study of several CAFOs of poultry and pork, but the analysis and report were soundly criticized by the SAB. Early last fall, OAR approached ORD rather earnestly to help reanalyze the study data (ORD had some involvement in the design and conduct but less in analysis). Within a couple months, a staff proposal from an OAR/ORD working group was submitted – abstracted here in a page. However, since submission through ORD and OAR IOAAs, there has been no word (from either OAR or ORD) on whether this was reasonable or whether folks should proceed.

There would be some cost to this reanalysis as indicated in the abstract which is why I elevated this for the joint meeting. As we move forward with our current StRAP plans, I feel it in the best interest of everyone to reach a final decision of a path to that end. On the other hand, perhaps the urgency is lost... and we let this lie.

A couple significant points: (1) as noted there is some resources needed and there would be some time to gear up and (2) it would seem appropriate that either ORD or OAR IOAA approach USDA at a high level (perhaps through the Administrator's Ag Associate) to enlist their collaboration since they have more knowledge and analytical technical expertise with ag processing models.



dlc

\*\*\*\*\*

Dan Costa, Sc.D., DABT / National Program Director for Air Climate & Energy Research, E205-09 EPA/ORD / Research Triangle Park, NC 27711 / Office - E211-D / ph. 919.541.2532 / work cell: 919.280-6841 / personal cell: 919.951.9983 / fax: 919.685.3248 /

work email: [costa.dan@epa.gov](mailto:costa.dan@epa.gov) / home email: [costadl40@gmail.com](mailto:costadl40@gmail.com)

[FEDEX address: 4930 Page Rd. / Durham, NC 27703]

Program Website - <http://www.epa.gov/airsceience> / <http://www.epa.gov/research/climatescience>

Office Assistant - Patricia McGhee: 919-541-2607